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MARYLAND HORSE PARK & AGRICULTURAL EDUCATION CENTER FEASIBILITY STUDY

May, 2006



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ARCHITECTS

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Feasibility Study
Maryland Horse Park
and
Agricultural Education Center

I. Executive Summary



I. Executive Summary

The Maryland Horse Park and Agricultural Education Center, proposed for location at the US Naval Academy Dairy Farm (“USNA Dairy Farm”) in Gambrills, Maryland, would have a profound impact on the growing recreational horse industry in Maryland, be a positive economic engine for Anne Arundel County and the State, benefit small agricultural businesses and encourage the protection of farm land and open space throughout the State.

Project History

In 1999, the Maryland Horse Industry Board began consideration of how best to establish a Maryland Horse Park. Over the next few years, an equine census was taken and the Maryland Horse Forum was organized. That Forum recommended that a study be conducted to determine the feasibility of a Maryland Horse Park. In May 2005, the Maryland Stadium Authority, in conjunction with the Maryland Department of Business and Economic Development and the Horse Industry Board (a division of the Maryland Department of Agriculture), gained approval from the budget committees of the Maryland General Assembly to undertake this study.

A selection committee, consisting of seven members and representing the three agencies, was formed. Proposals for property nominations were solicited from all the counties and municipalities in the State of Maryland. Six jurisdictions submitted proposals for their sites to be considered for the feasibility study. Throughout the site selection process, the committee was advised by experts including an economic impact consultant and an architectural / engineering team. Advice on assessing each site also was provided to the committee by sister State agencies including the Maryland Department of Natural Resources and the Maryland Department of Planning. The evaluation included assessment of the site’s ability to accommodate the programmatic needs of the facility and to generate economic and fiscal impacts for the local

community and the State. The USNA Dairy Farm site was unanimously selected by the committee for the study.

Usage/Site Design

The Horse Park will be designed to attract national and international non-racing competitions, including show jumping, eventing, dressage, various western riding events and steeplechase. In addition, it is anticipated that the park will host other equestrian events such as breed demonstrations, trail riding, jousting, rodeo, 4-H and other youth activities for all levels of skill and interest.

To accommodate the scale and caliber of events anticipated, the park will be designed with state-of-the-art show rings, trails, stalls, a cross country course and an indoor equestrian center.

Site Availability

The 875-acre parcel is owned by the United States Navy and is restricted to agricultural use. The Navy recently issued a Request for Information (RFI) and may issue a Request for Proposal (RFP) as early as the Spring of 2006. The park will preserve the Federal land with a long term lease for agricultural use and will increase public access and recreational opportunities at this jewel of a site.

Traffic

An initial traffic study was performed as part of the feasibility study, and makes specific road improvement recommendations. Because a horse park generally has events operating on a day-long basis, participants and spectators arrive and depart at different times. In addition, most of these events will be held on weekends, further diminishing the traffic impact on the surrounding neighborhoods. Addressing traffic concerns is vital

to the project's success. If the project moves forward, the Maryland Stadium Authority will implement not only the recommended Route 175 and the Route 3 intersection improvements, but also will work with the State Highway Administration and Anne Arundel County to establish a permanent solution to the current Route 3 corridor congestion issue.

Economic Impact, Cost & Funding

The economic report estimates total spending by visitors to the Maryland Horse Park at \$122,508,000. A large portion of these revenues will result primarily from out-of-state visitors who, except for the attraction of the horse park, would not visit Maryland. These visitors will use the park, stay in nearby hotels, dine in local restaurants and purchase goods and services. This level of spending would generate \$6,872,000 in taxes to the State, \$2,293,000 to Anne Arundel County and \$179,000 to the City of Annapolis. The \$9,344,000 in total taxes generated by the project should exceed debt service payments on bonds issued to fund project costs over a 30 year period, and generate a net revenue gain for Anne Arundel County and the State. Costs to build the Horse Park are estimated to be \$114,165,202.

The horse park is expected to break even on the operational side. Fasig Tipton Mid-Atlantic, Inc. has expressed a strong interest in conducting its thoroughbred sales at the new horse park. Fasig Tipton has outgrown Timonium and is considering other proposals from surrounding states. The horse park is a perfect fit for their sales operations and could keep this important business in Maryland. These sales are currently \$40 million annually, and would generate additional revenues for the horse park. The convenient central location of the proposed facility will also increase the potential to attract a high number of visitors.

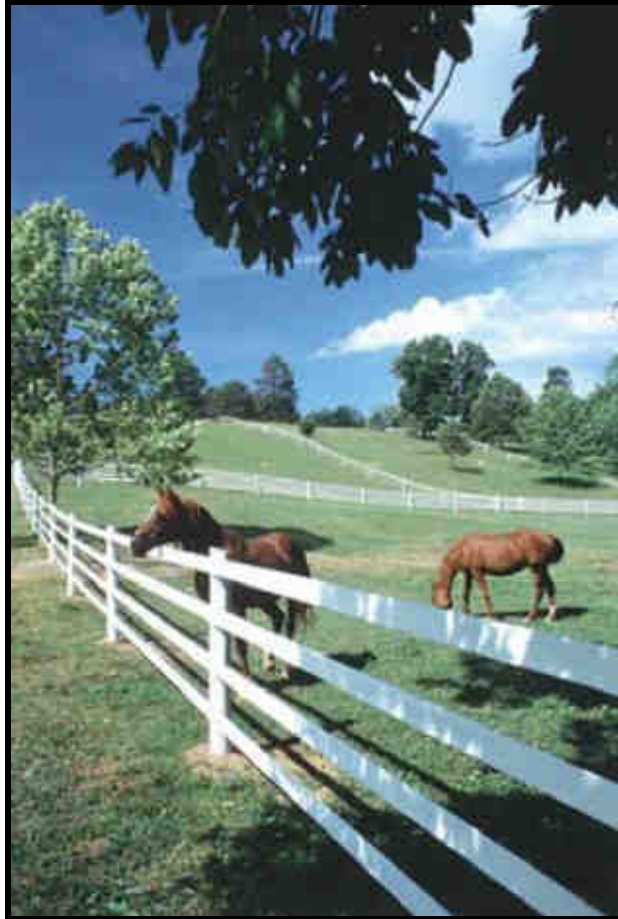
Open Space/Agricultural Benefits

A horse park would have a domino effect on surrounding farms and businesses. Local farms could stay in business supplying the increased market for straw, hay and other services required at a horse park. This investment will have far reaching implications for the preservation of open space without local or State subsidies by helping farmers remain profitable.

II. The Maryland Horse Park and Agricultural Education Center Vision



II. The Maryland Horse Park and Agricultural Education Center Vision



What began as a dream of the Maryland Horse Industry Board (MHIB) in 1999 is now becoming closer to reality...The Maryland Horse Park and Agricultural Education Center.

On the recommendation of the MHIB in May 2005, the Maryland Department of Agriculture with the support of the Maryland Department of Business and Economic Development asked the Maryland Stadium Authority to conduct a feasibility study for the establishment of the Maryland Horse Park and Agricultural Education Center.

By June 2005, the Maryland Stadium Authority had organized a project team to conduct the feasibility study, which included a statewide site selection process, a market

analysis, master planning, development cost estimating, and economic analysis. In order to ensure the development of a successful world-class facility, the project team included active equestrians from the Maryland horse industry, representatives from the MHIB and the Maryland Department of Business and Economic Development, and equestrian architects with vast experience planning and designing equestrian facilities.

In October 2005, the project team, through a rigorous process, selected the scenic and historic USNA Dairy Farm site in Gambrills, Maryland between Baltimore and Annapolis and just minutes from Baltimore-Washington International Airport (BWI). The site includes approximately 875 acres of gently rolling hills and is at the center of the largest horse population in Maryland. The site is minutes from major highways and is strategically located to serve the rapidly growing equine industry along the eastern seaboard and the Midwest. Its proximity to almost 9,000 hotel rooms, restaurants, major tourist attractions, and other visitor support services will increase its potential for significant economic impact to the State and areas surrounding the Horse Park.

Among the last of the open spaces in the area, the USNA Dairy Farm is ideal for the Maryland Horse Park. The master plan carefully integrates the new equestrian facilities with the natural environment and historic elements of the USNA Dairy Farm, while preserving vast tracts of open space for outdoor equestrian events, recreation and agriculture. Preservation of the rural environment experience is a key element in developing the Horse Park as an internationally-acclaimed venue for equestrian sports, recreation and educational functions.



The planners have been very sensitive to the unique characteristics of the natural environment, as well as the surrounding community. Careful landscape planning, including the enhancement of perimeter buffers and increased canopy cover, will help shield the Horse Park from surrounding development and will also mitigate sound and light pollution, preserving the rural feel of the site. Stormwater management initiatives include limiting non-permeable roads and parking areas and collecting building and site runoff for irrigation, limiting the use of potable water park operations.

The history of the site is very important. The historic USNA Dairy Farm structures, to be known as the Historic Zone, will be restored and enhanced to fulfill the education and heritage missions of the Horse Park. The Historic Zone will include a visitor's center and gallery featuring historic artifacts and information about the former USNA Dairy Farm operations, an education center, restored cottages for education center guests, and the existing dairy barns will be restored to house a commissary, stabling for the park's mounted patrol, 4-H activities, trail riding, pony rides and carriage horses, and maintenance operations. These elements will be operated as working exhibits to provide the public with an inside look at a real-life equestrian operation.



The Equestrian Zone will include the sport and recreation facilities required to support the vast spectrum of equine interests in Maryland and the region. The new facilities will be among the finest in the world, with careful consideration given to efficient event operations, safety, security, and the health and well-being of the animals, exhibitors and spectators. A climate-controlled indoor equestrian center and sales ring, with a covered practice area, and heated and interconnected stables, will allow year-round operation of the Horse Park regardless of weather conditions. Additionally, the facilities have been planned and programmed to ensure compatibility with both FEI and Olympic level requirements for equestrian venues, making the Horse Park a premier location for major national and international events.

The primary Equestrian Zone facilities include:

- Visitors Center and Equestrian/Agriculture Museum;
- Indoor climate-controlled equestrian show ring with 2,500 seats (fixed), a sales ring, restaurant and lounge overlooking the rings, and adjacent indoor warm-up arena;
- Outdoor equestrian show ring with seating and adjacent warm-up ring;
- Seven additional outdoor show and practice rings with a variety of footings including grass;
- Grass Grand Prix field;
- Stabling for 840 horses with toilets, showers, walking rings, farrier and veterinary procedure areas;

- 3+ mile cross-country course and combined driving venue with water courses, timber routes and multiple spectator overlooks;
- 1 mile turf steeplechase course with 1,500-seat grandstand;
- ¾ mile fibre-sand training track to support horse sale functions;
- Extensive outdoor public space and attractions to support the Horse Park mission, including carriage station, sculpture garden and equestrian-related retail vendor areas; and
- Trail riding available for public use.

The architecture of the new facilities will capitalize on the rural environment experience, utilizing natural materials such as native stone, wood, and slate. It is also anticipated that these facilities will be designed according to U.S. Green Building Council LEED guidelines for sustainable design. *“It is the intent of the planning team to create not only the best equestrian facility in North America, but also a model for the world regarding environmental concerns, energy conservation, and historic preservation,”* stated Todd Gralla of the international equestrian architecture firm gh2 Gralla Architects.



In conclusion, we know of no other government initiative with such a wide range of benefits for our state and its citizens. The Maryland Horse Park:

- Is a model for environmental sensitivity and land conservation in an increasingly urban region.
- Creates a permanent open space with numerous recreational options for spectators, participants and the community.
- Provides facilities for a growing aspect of our agricultural industry and provides an enhanced market for numerous support services including farming.
- Provides facilities for activities that serve the community, as well as attract visitors and commercial enterprises from beyond Maryland's borders.
- Establishes an equestrian venue of world-class scope and quality.
- Offers potential for further economic development in conjunction with a lucrative equine import-export port of entry at BWI-Thurgood Marshall Airport.
- Will spur additional recreation facilities via adjacent trails along the historic railroad right-of-way that once connected Baltimore, Washington and Annapolis.
- Will be an educational facility with museums, historic exhibits and working agricultural operations reflecting our rural heritage.

The Maryland Horse Park is not only an inspired vision, it is an excellent investment by and for the citizens of the great State of Maryland.

According to David O'Connor, President of the United States Equestrian Federation, Inc., "The site upon which you have chosen to build a world-class facility is ideal to meet the needs of our horse sports" and "This project has the potential to be a tremendous asset to the economy of Maryland as well as to the local economies in the area."

III. Agricultural Industry Benefits



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Maryland Department of Agriculture

Office of the Secretary

Robert L. Ehrlich, Jr., Governor
Michael S. Steele, Lt. Governor
Lewis R. Riley, Secretary
John R. Brooks, D.V.M., Deputy Secretary

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April, 2006

Ms. Alison Asti
Executive Director
Maryland Stadium Authority
333 West Camden St., Suite 500
Baltimore, Md 21201

Dear Ms. Asti:

Horses are an important part of Maryland's past, its present and we are certain, its future. The state has more horses per square mile than any other mid-Atlantic state or Kentucky and continues to grow rapidly. A Maryland Horse Park would strengthen many aspects of the state's agricultural economy, land preservation efforts, and the quality of life for a broad range of Marylanders. Because horses are designated as agricultural livestock under Maryland statute, the Horse Park as proposed would be licensed by the Maryland Department of Agriculture.

The presence of a strong horse industry, both the recreational sector (60 percent) and the racing sector (40 percent), has a direct positive impact on hay and grain farming, agricultural service providers, suppliers of farm equipment and other agricultural goods, animal health practitioners, and the preservation of pasture land.

Consider a few statistics about the impact of horses in Maryland:

- 685,000 acres with more than 20,000 horse operations;
- 20,000 or more jobs;
- \$72 million in federal, state, and local taxes paid;
- Approximately 50,000 tons of equine specific grain feed sold each year; and
- More than a million acres of land producing grain and hay could contribute to equine feed.

In our increasingly suburban state with a changing agricultural market place, more and more farmers rely on horse-related activities to remain on




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the farm and in business. These ventures include boarding stables and growing high-quality hay and grain specifically for horses. If not for the equine industry, a number of farms would likely be out of business and developed. It is ever more important for the state's economy that we support initiatives such as the Maryland Horse Park and that we find ways to expand all aspects of the equine industry.

Sincerely,


Lewis R. Riley
Secretary

III. Agricultural Industry Benefits

. The Maryland horse industry may be compared to an iceberg. The tip of the iceberg is what is visible to the general public: Maryland's racetrack operations. Beneath the surface, however, is a mammoth industry that until recently has lacked visibility and consequently has remained largely unappreciated. Sixty percent of Maryland's horses are used for sport, recreation and work purposes. In addition, participants involved in the Maryland horse industry represent all demographic categories. The Maryland horse industry has assets totaling more than 5.2 billion dollars, holds approximately 10% of Maryland's land, has twice as many horses per square mile as Virginia, Texas, California, or Kentucky, and employs approximately 28,800 people. This industry has ties to almost all sectors of the Maryland economy, including agriculture, environment, transportation, business, economic development, and education. According to state agencies, the Maryland horse industry has an annual economic impact estimated to be three times that of all college and professional sports franchises combined. The horse industry is a part of Maryland's cultural and economic heritage and is an enduring resource.



According to the 2002 Maryland Equine Census conducted by the United States Department of Agriculture (USDA) – Maryland Agricultural Statistics Service there are over 87,000 horses in Maryland. The entire equine industry is accepted and defined as agricultural by the Maryland Department of Agriculture, as is evidenced by the installation of the Maryland Horse Industry Board within the Maryland Department of

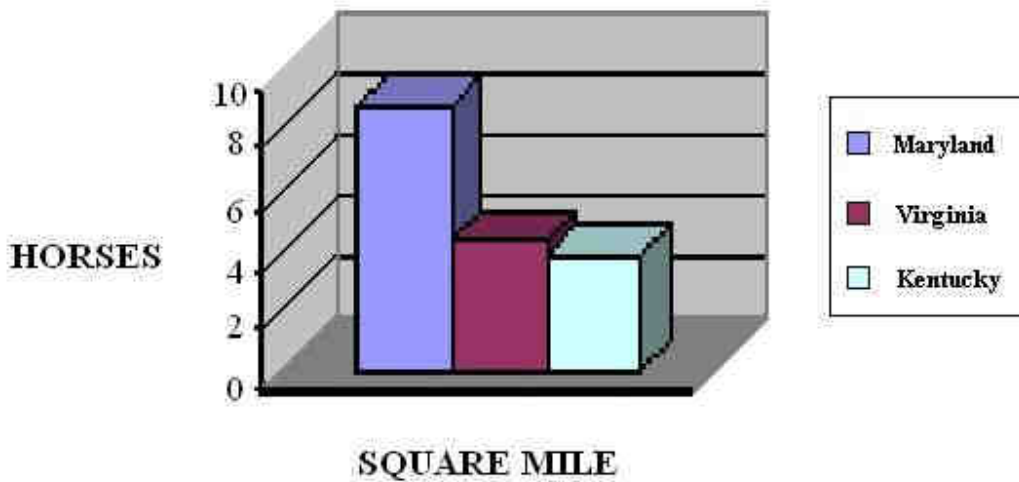
Agriculture. Horses are one of the top ten agricultural products of the State. While horses themselves are not used for food or fiber, they are bred, trained and sold in Maryland. When discussing the agricultural impact of the horse industry and the creation of a Maryland Horse Park in Gambrills one must analyze not only the direct impact upon local and State equine operations, but also the direct and indirect impact of the industry upon other commodities such as hay, grain, and pasture as well as the impact upon agricultural service providers, equipment suppliers and other agricultural goods.

Hay, Grain, and Other Crop Production



Forage produced for sale by Maryland farms has seen a dramatic increase over recent years in its profitability as a cash crop. Crop farmers have witnessed substantial declines in production of most other crops, most notably tobacco production. Hay crops have been a salvation for many area farms as it brings a higher price in Maryland than in all of the bordering states. Moreover, the density of horses in Maryland is almost twice that of all other Mid-Atlantic States with almost nine horses per square mile. Hay production has been intrinsically tied to livestock production and decreases in livestock

HORSES PER SQUARE MILE



(including equine) production would be mimicked by decreases in hay production, as the market would not tolerate over production. According to the USDA Summary of Agriculture in Maryland that coincided with the 2002 Agricultural Census, total hay production was 508,000 tons, with a record season average price for hay set at \$143 per ton. At the same time, livestock production (other than equine) saw almost a 50% decrease in production and cash receipts when compared to a decade earlier. Future studies warrant the comparison in the dramatic rise in hay yield and price when compared to increases in the States equine population, as they are undoubtedly linked. As of 2004 the USDA estimated that the production of hay in Maryland ranked it in the top three crops produced in the State: 570,000 tons of hay were produced and sold at an average of \$131 a ton, which amounted to \$75,630,000 of sales. The top two crops by production were corn for grain (\$139,804,000), and soybeans (\$112,811,000). In a distant fourth place was wheat production, with the total amount of wheat sold for \$26,093,000. It should be noted that all of these crops are utilized as equine feed, as are other grain products, although horses and other livestock are not necessarily the sole consumers of these products. This does however indicate that without the continued strength of the equine industry the staple crops and farms of Maryland would decline drastically. With the introduction of a new market in a Maryland Horse Park,

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and the resulting stability in the equine industry, particularly the recreational breeding and sporting areas that amount to 60% of the total industry in Maryland, hay and other related feed crop production could remain as viable commodities for Maryland farmers and could potentially increase.

• First organized racing in North America (Maryland Jockey Club, 1743) • First state breeders association (Maryland Horse Breeders Association, 1929) • First Thoroughbred yearling show (Maryland Horse Breeders Assoc., 1932) •

Horse farms maintain Maryland's green space.

Maryland's Horse Industry

Maryland horse farms are viable agricultural businesses, regardless of the cost of land. Agriculture is Maryland's number one industry.

Total value of all equine-related assets in Maryland: **\$5.2 billion.**
—Maryland Equine Census, U.S.D.A., 2002

Horse people hold over **685,000 Maryland acres** which equals **10% of Maryland land.**
—Maryland Equine Census, U.S.D.A., 2002

There are **20,200 horse farms** in Maryland.
—Maryland Equine Census, U.S.D.A., 2002

There are over **87,000 horses** in Maryland.
—Maryland Equine Census, U.S.D.A., 2002

60% of the horses in Maryland are for recreational purposes; 40% are for racing.
—Maryland Equine Census, U.S.D.A., 2002

Over 38,000 people in Maryland are directly involved with horse ownership.
—Maryland Equine Census, U.S.D.A., 2002

Maryland horses are worth **\$680 million.**
—Maryland Equine Census, U.S.D.A., 2002

Horse people own **\$3.9 billion** worth of Maryland land, fencing and facilities.
—Maryland Equine Census, U.S.D.A., 2002

The top five individual breeds of horses in Maryland are Thoroughbreds (33%), Quarter Horses (14%), Standardbreds (7%), Arabians (5%), and other warmbloods (4%).
—Maryland Equine Census, U.S.D.A., 2002

Maryland has **twice as many horses per square mile** than Virginia, Texas, California, or Kentucky.
2004 Maryland Horse Forum Report

This industry has **ties to almost all sectors of the Maryland economy**, including agriculture, environment, transportation, business, economic development, and education.
2004 Maryland Horse Forum Report

Equine sales and related expenditures amount to over **\$885 million** annually in Maryland.
—Maryland Equine Census, U.S.D.A., 2002

The five largest counties in terms of equine inventory numbers are Baltimore (12%), Montgomery (10%), Frederick (10%), Prince George's (9%) and Harford (8%).
—Maryland Equine Census, U.S.D.A., 2002

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Key to map

Thoroughbred farms

Standardbred farms

Licensed riding stables

The horse industry is a part of Maryland's cultural and economic heritage and is an enduring resource.
2004 Maryland Horse Forum Report

• First state magazine (The Maryland Horse, 1936) • First international race to feature horses from four continents (Washington, D.C., International, 1952) •

• First million-dollar one-day stallion stakes event (Maryland Million, 1986) • First to recognize Thoroughbred as state symbol (Maryland General Assembly, 2003) •

• First major northern state to pioneer winter racing (Bowie Race Course, 1957) • First state breeder incentive development program (Maryland Fund, 1962) • First computerized, luxury, high-tech sports palace (Laurel Park, 1985) •

Pasture (Greenspace)

According to the USDA Maryland Equine Census in 2002 the amount of acreage held by equine operations in the State of Maryland was over 685,000 acres, with approximately 206,000 acres used specifically as pasture, and with over 20,000 places housing equine in the State. This amounts to almost 10% of Maryland land being held as greenspace in the horse industry. Unfortunately for Maryland, neighboring States such as Pennsylvania, Delaware, and West Virginia have enacted measures over recent years that have dramatically increased the profitability of equine farms in those States, while Maryland has lost its previous competitive advantage, and the State has done little to counteract the potential loss of equine operations. Neighboring states have determined that the overall impact of the equine industry not only as an economic engine (\$112 billion annual impact nationally), but also because of other benefits such as greenspace preservation, make it a necessity for continued productivity of State and local rural economies, especially in rapidly urbanizing areas. The installation of a Maryland Horse Park would buffer losses associated with farm loss and create sustained viability for recreational breeding and sporting operations. As this sector of the industry accounts for approximately 60% of the equine farms, this could mean roughly that 411,000 acres are retained as equine operations, with more than 125,000 acres retained specifically as pasture greenspace.

Agricultural Service Providers

As a mainly service based industry there are a large number of jobs associated with the entire equine industry. Estimates of equine industry direct jobs have exceeded 20,000 in Maryland. Included in this report is the analysis related to the impact of the establishment of more than 1,000 jobs related to the Maryland Horse Park. Those jobs would relate to any number of areas outside of what is thought of as the agricultural industry; however they also include hundreds of traditional agricultural service providers. Veterinarians, feed dealers and manufacturers, hay and grain farmers,

horseshoers, farriers, blacksmiths, equine dentists, tack suppliers, manure removal services, are among those potential jobs. With over \$765 million spent on equine operating and capital expenditures in Maryland, this industry is a major employer in the State. Anne Arundel County currently has 2,320 equine owners alone, not including employees. The installation of the Maryland Horse Park could dramatically affect the job availability both inside and outside of the county and create an increased tax base of revenue with which the county could generate any number of other public projects. According to the 2005 American Horse Council study of the Maryland Horse Industry, over \$72 million was spent, generating federal, state, and local taxes. This revenue could increase not only as a result of equestrian spending but also as a result of new income taxes generated by agricultural service providers.

Equipment Suppliers and Other Agricultural Goods



The theory of critical mass applies well to the current state of the Gambrills economy and the potential for the Maryland Horse Park to retain the agricultural character of the area. Most land use models assume agricultural landowners will farm the land until the value in an alternative use exceeds the agricultural value. As agricultural operations sell land, the loss of farmed land results in a loss of service providers thus continuing the rise in the cost of operation of an agricultural enterprise. At current it is evident that the current operation at the USNA Dairy Farm is unable to solely sustain

agricultural service providers in the area. Most recently, immediately adjacent to the current farm location, one of the last remaining agricultural suppliers in the west county area, Southern States, was forced to close its agricultural supply section at Rentals Plus, Inc. in Gambrills. Instead, it has opted to operate only as a lawn and garden center and pet supply store. With an increased market at the Maryland Horse Park, this operation could once again operate its agricultural supply section and thus maintain infrastructure necessary for regional farms to remain in operation.

Farm loss in Anne Arundel County was over 7% between 1997 and 2002, and over 23% from 1987 to 2002 according to the USDA. At the same time government subsidies per farm were raised by 98%, and overall government subsidies increased in the county by 76% from 1997 to 2002. This dramatic increase is most likely associated with the "tobacco buy out" and indicates a deeper trend where the local farmers are becoming increasingly unable to profit from traditional agricultural enterprises in Anne Arundel County. In order to counteradjust this trend, new markets for agricultural commodities are needed to surpass the cost of doing business, and the resulting urge to sell farm land for development. According to the 2002 USDA Maryland Equine Census over 8,400 head were sold at an average price of \$14,196. Cost to benefit analysis indicates that the relative high cost of production does not surpass the rate of return in breeding equine. Comparatively speaking, other agricultural commodities do not approach this rate of return on a per animal basis with a difference of in most cases more than \$10,000 per animal. The installation of a sales pavilion at the Maryland Horse Park could generate an increase in sales related to Maryland equine, while at the same time retain sales currently operating in the State. This increase could potentially result in millions of dollars in increased and retained revenue for the Maryland economy.



Although a small impact on the Maryland economy, mushroom production is intricately linked to the horse industry. Mushroom growers require large quantities and a dependable supply of horse manure in order to grow mushrooms. Strawbedded horse manure can be a workable and profitable way to dispose of horse manure while earning a return on what many deem to be useless material. The Maryland Horse Park will create an increased availability of compost thereby reducing the overall cost of production for mushroom farms.

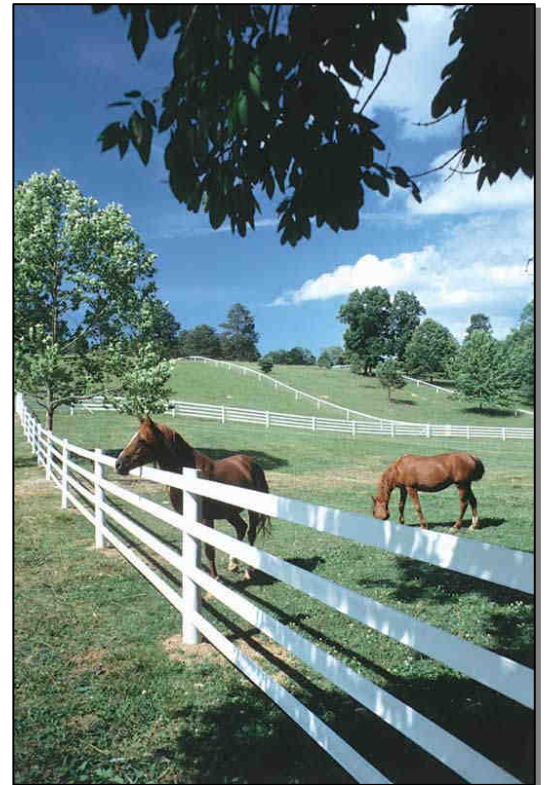
IV. Master Plan and Site Development Concepts



IV. Master Plan and Site Development Concepts

The Maryland Horse Park will celebrate the traditions of the horse industry in the state. These traditions, which run back to early colonial days, echo with historic rural landscape settings. A great deal of what one thinks of as traditional Maryland rural landscape is based on the horse – breeding, training, haymaking and related operations - and a rural economy focused around these activities. Large areas of the state still support a vibrant horse-based rural economy, and many regions still exhibit the character and industriousness of those who breed, train, and own horses. The horse is synonymous with the state's identity, and the landscape of the horse farm is integral to that relationship.

While there may be no typical Maryland horse farm, training or event facility, there are typical landscape elements associated with the form. Three and four paneled fences (black or white painted), rolling meadows, paddocks and fields, farm complexes of barns, stables and homes, intermittent copses of trees and woodland providing shade and shelter, watering holes and impoundments – these are all consistent features of both Piedmont and Tidewater horse farms (though Tidewater horse farms may be a little less rolling!). There is altogether a relaxed, unhurried, charm to these places. Roads are narrower, may even be gravel, hedgerows and



ditches provide a gracious and wider setting for viewing fields and paddocks from the road. Buildings are set close in compounds, but compounds are distanced and sequestered. Quiet rural settings are good for horses, and no less a comfortable environment for their human counterparts.

The Maryland Horse Park starts with the proposition that its site layout and landscape should embody those traditions of farm planning and landscape associated with the horse in Maryland. The entrance, off Route 175, presents a low-key, rural setting – rolling unpaneled meadow that rises slowly along the entrance road to a low ridge overlooking the main body of the park. A small gateway just over the ridge announces formal arrival at the Horse Park, and the start of fence paneling heralds the presence of the horse. Fields dotted with horses lie to either side. The cross-country competition venue is directly ahead and extends to the horizon of the property's woodland buffer to the southwest. The visitor proceeds to the right, westerly, past the security checkpoint and on to visitor parking, passing the grassy expanse of overflow parking primarily used during steeplechase and other high attraction events.



Below the far northwestern ridge lie a complex of stables and competition venues arranged neatly and compactly around an indoor equestrian ring. Equestrian exhibitors have their own point of departure off the main entrance road, and proceed to stables and trailer marshalling and parking areas to the west of the core equestrian complex. Visitors proceed over a covered bridge and through a small stream-centered woodland to a heavily canopied parking lot, whose layout is contoured to the topography and lies lightly to the ground. A portal and visitor center await, at the entrance to the venue area, and a strolling promenade, cafe, vendors, and museum activate the walk between indoor ring on the west and steeplechase course with its dramatic open-air grandstand to the east. Immediately to the north of the strolling promenade are outdoor show rings and and the primary outdoor show ring with covered grandstand, and the complex of additional facilities necessary for various competitive flatwork horse events.



The main facilities of the Horse Park (the Equestrian Zone) are accommodated in the site's central core lowland, permitting the cross-country competition venue to the west, tracks to the east, and open meadows along the entry road to act as the grand overall setting of open space and native woodlands. To the north on a ridge lies the USNA Dairy Farm complex (the Historic Zone), separate but not far from the core Horse Park facilities. Paddocks and groves, farm service roads and carriageways visually and functionally connect the two attraction areas. From the USNA Dairy Farm ridge looking south, the Horse

Park venues unfold gently across the low-lying meadow in the distance, melding into the cross-country course and woodlands to the south. The USNA Dairy Farm area is composed of a restored residential component, housing overnight education center guests and VIPs, and the farm complex itself, variously restored and renovated for historic interpretation, farm display, agricultural group use (4-H, etc.) and, in the lower sections, maintenance and operations for the Horse Park.

To create this setting, thousands of new trees are planted to create new woodlands that will help with site and stream restoration, create landscape character, provide shade for the horses, exhibitors, and spectators, and assist in protecting and screening adjacent residential areas from horse park activities. New water bodies will be created to collect storm water for storage and later irrigation, protect water quality, and to provide pleasing character relationships in the lower areas of the property. A fence, mostly out of view in perimeter woodlands, will run around the entire perimeter of the park, for security and horse safety considerations. The central core of the property is held largely open and visually contiguous, permitting panoramic views from the USNA Dairy Farm ridge and allowing the visitor to experience the scale and character of a genuine rural Maryland setting.



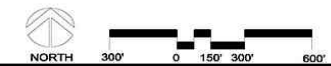


- 1 MAIN PUBLIC ENTRANCE
- 2 MAIN PUBLIC ENTRY ROAD
- 3 ENTRY GATE FEATURE
- 4 SECURED ENTRY AND TURNAROUND
- 5 COVERED BRIDGE
- 6 PUBLIC PARKING
- 7 DROP OFF PLAZA
- 8 STEEPLECHASE GRANDSTAND
- 9 1-MILE STEEPLECHASE TRACK
- 10 5/8-MILE TRAINING TRACK
- 11 GRAND PRIX JUMPING FIELD; 360' X 400'
- 12 OUTDOOR EQUESTRIAN SHOW RING; 150' X 300'
- 13 OUTDOOR GRASS SHOW RING; 150' X 300'
- 14 VISITOR CENTER AND MARYLAND MUSEUM OF THE HORSE
- 15 PUBLIC PLAZA
- 16 INDOOR EQUESTRIAN RING
- 17 EQUESTRIAN SALES PAVILION
- 18 MAIN OUTDOOR EQUESTRIAN SHOW RING; 150' X 300'
- 19 OUTDOOR EQUESTRIAN SHOW RING; 150' X 300'
- 20 OUTDOOR WARM-UP RING; 100' X 200'
- 21 EXISTING RENOVATED HISTORIC BARN (TACK STORE)
- 22 HORSE BARN; 120 STALLS EACH (TOTAL 840 STALLS)
- 23 TEMPORARY STALL TENTS; 20 STALLS EACH (TOTAL 160 STALLS)
- 24 CENTRAL PLANT
- 25 HORSE TRAILER PARKING
- 26 EQUESTRIAN EXHIBITOR PARKING
- 27 COVERED SPECTATOR SEATING

- 28 EQUESTRIAN CROSS COUNTRY AND DRIVING COURSE
- 29 HISTORIC HOME SITE AND GRAVEYARD
- 30 CAMPING SITE
- 31 POLO CROSS / SOCCER
- 32 SERVICE ROAD
- 33 CARRIAGE PATH
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- 44 HISTORIC DAIRY ENTRY
- 45 POSSIBLE LANDSCAPE / NURSERY SITE
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- 47 STORMWATER PONDS / WATER EVENTS
- 48 STORMWATER PONDS / IRRIGATION
- 49 STORMWATER PONDS
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- 51 BUS PARKING
- 52 DAIRY FARM BUS AND OVERFLOW PARKING (GRAVEL)
- 53 HORSEMAN'S SECURED ENTRY

Maryland Horse Park

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V. Equestrian Facilities Design Concept (The Equestrian Zone)



V. Equestrian Facilities Design Concept (The Equestrian Zone)

The planning concept for the proposed master plan addresses all the functional requirements necessary for optimum usage, future expansion, flexibility, safety and efficiency – creating a world-class equestrian venue with the capability to host major national and international events. The shape and location of the site allows for excellent access and flow of spectators, exhibitors and livestock, insuring safe circulation in and around the site. Most of the primary event venues, which are aligned along a west-east axis, not only define a division between public and equine circulation, but also create a “bridge” which symbolizes the convergence of the spectator and the exhibitor. With this orientation of these venues, equine and exhibitor circulation may be confined to the northern side of the arenas with the public entering from the south, providing effective separation for safety and efficiency.



The primary Equestrian Zone facilities include:

- Visitors Center and Equestrian/Agriculture Museum;
- Indoor climate-controlled equestrian show ring with 3,500 seats (fixed & temporary), 400-seat sales ring, restaurant and lounge overlooking the rings, and adjacent indoor warm-up arena;
- Outdoor equestrian show ring seating 2,000 and adjacent warm-up ring;

- Seven additional outdoor show and practice rings with a variety of footings including grass;
- Grass Grand Prix field with 2,000 seats;
- Heated stabling for 840 horses with toilets, showers, walking rings, farrier and veterinary procedure areas;
- 3+ mile cross-country course and combined driving venue with water courses, timber routes and multiple spectator overlooks;
- 1-mile turf steeplechase course with 1,500-seat grandstand;
- ¾-mile fibre-sand training track to support horse sale functions; and
- Extensive outdoor public space and attractions to support the Horse Park mission, including carriage station, sculpture garden, equestrian-related retail vendor areas, etc.



The architecture of the new facilities will capitalize on the rural environment experience, utilizing natural materials such as native stone, wood, and slate. It is also anticipated that these facilities, including both the building and site elements, will be designed according to U.S. Green Building Council LEED guidelines for sustainable design.

The Equestrian Zone Enlarged Site & Facilities Plan

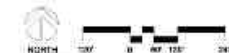
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| 8 | STEEPLECHASE GRANDSTAND | 24 | CENTRAL PLANT |
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| 14 | VISITOR CENTER AND MARYLAND MUSEUM OF THE HORSE PUBLIC PLAZA | 32 | SERVICE ROAD |
| 15 | INDOOR EQUESTRIAN RING | 33 | CARRIAGE PATH |
| 17 | EQUESTRIAN SALES PAVILION | 48 | STORMWATER PONDS / IRRIGATION |
| 18 | MAIN OUTDOOR EQUESTRIAN SHOW RING, 150' X 300' | 49 | STORMWATER PONDS |
| 19 | OUTDOOR EQUESTRIAN SHOW RING, 150' X 300' | 50 | WATER FEATURE |
| 20 | OUTDOOR WARM-UP RING, 100' X 200' | 51 | BUS PARKING |
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Visitors' Center & Horse Park Museum

As the first building visitors will encounter, the museum and visitors' center building will be one of the most important "signature" structures at the Horse Park. These facilities set the tone for the experience awaiting the visitor and provide an orientation for the visitors' experience.

Immediately inside the main entry, visitors are greeted by a generous lobby and gathering area punctuated with interpretive equestrian exhibits and graphics. From this lobby, guests may visit the gift shop and museum, orientation theater, multi-purpose room for a guest lecture, or proceed through security points and a gallery portal to the main body of the Equestrian Zone. Other support areas, such as ticketing, security, first aid, and public toilets, are components of this public entry facility. Administration and museum offices are located on the second level, providing the Horse Park executive staff with panoramic views of virtually the entire site.

The museum exhibits and galleries are planned to focus on the enduring history, numerous supporting agricultural enterprises,



and colorful characters of the Maryland equine industry since early colonial days. It is anticipated that a permanent collection of carriages, trophies, tack, art, and other significant artifacts will grow and eventually rotate on a regular basis as the museum collection matures.



It is anticipated that this building will be designed as a wood structure to harmonize with the Horse Park environment dominated by open meadows and native woodlands. The building will be characterized by a high quality of construction, well crafted details and durable materials such as stone flooring in the public spaces, exposed wood roof structure and ample glazing. The exhibition galleries will have special wall construction typical of museum buildings (two layers of plywood faced with a gypsum drywall finish layer). The galleries and any archive or collection storage spaces must be secure and shall be equipped with a high quality HVAC system capable of maintaining a constant temperature and humidity (50% RH) year round. Galleries will be provided with both diffuse natural light and track lighting. Public spaces and the building exterior will have high quality architectural lighting. In addition to the galleries and the public spaces, the museum building will have offices and an activity room for visiting school groups.

Primary Equestrian Show Rings

Two primary equestrian show rings are located at the west end of the pedestrian promenade, one an Indoor Equestrian Show Ring and the other an Outdoor Equestrian Show Ring. These two main rings are organized functionally to compliment one another during large events that will utilize both as performance venues. Spectator entries for both rings are located at the west end of the pedestrian promenade, close enough to conveniently move between the two rings, but with enough separation to allow two independent events to occur without conflict. The exhibitors access the arenas on the north side, from the barn and warm-up areas, thus providing safe and efficient flow separation between spectators and exhibitors.



Indoor Equestrian Show Ring

The Indoor Equestrian Show Ring serves as the anchor or central hub to the overall Equestrian Zone and is planned to provide flexible space capable of hosting a wide variety of national and international equestrian events. This facility is comprised of several components, including an indoor show ring, a horse auction pavilion, and an



indoor warm-up arena. The facility is supported by many amenities such as event offices, vendor areas, concessions, restaurant, lounge and private event rooms overlooking the arena floor.

The indoor show ring has a floor of 150 feet in width by 300 feet long. The show ring floor will be a concrete surface, allowing not only for a variety of equine footing mixtures to be taken in and out to satisfy all equestrian disciplines, but provides a clean floor for agricultural related exhibition events to be hosted, such as farm and garden shows. The spectator seating is elevated approximately seven feet above the show ring floor to minimize any distractions to the horse and rider and also to provide excellent site-lines for all spectators. The seating is arranged completely around the perimeter of the show ring with a combination of 480 box seats for groups and sponsors, and 2,100 fixed chair-back seats for a total capacity of 2,580 people. A mid-level concourse is located between the box seats and the general seating areas providing spectator circulation and providing space for accessible seating areas. An upper concourse is located behind the general seating areas and is where the main spectator circulation occurs



with access to restrooms, concessions, restaurant and lobby areas. Along the perimeter of the upper concourse, a row of retractable seating is planned to provide an additional 1,000 seats in the case of large event held at the facility, for a total seating capacity of 3,580 not including the floor. The structural system is located behind the seating areas to provide column-free viewing of the show ring floor for all spectators.

Located behind the general seating areas, are two private party rooms with each room accommodating 50 guests. The rooms are equipped with floor to ceiling operable windows, which overlook the show ring, and private food and beverage service areas for catering to private groups. A Restaurant is planned on the same level as the Private Party Rooms with tiered seating overlooking the show ring floor. The Restaurant will seat up to 200 people and is interconnected with a lounge, which will overlook the auction ring. Both the restaurant and the lounge will be serviced by a full kitchen with all the necessary food service equipment and amenities to provide dining guests with a variety of menu choices. It is anticipated that the restaurant and lounge will be open 7 days per week as a Horse Park Signature Venue.



Regardless of whether or not an event is occurring in the indoor ring, the restaurant and lounge will overlook the Equestrian Zone and will offer views of the Historic Zone on the ridge to the north.

Directly connected and integral to the Indoor Equestrian Show Ring facility, is the auction pavilion for handling equine and agricultural-related sales auctions such as the Fasig-Tipton thoroughbred sales that occur throughout the year. The auction ring floor is 30 feet wide and 60 feet in length and is at the same level as the show ring floor and directly connected. Seating is intimately arranged around the perimeter of the sales ring and is approximately 12 inches lower in order to provide an elevated view of the horses. A circulation concourse is between the seating area and the sales ring, which allows potential bidders to access the auction staging area behind-the-scenes for pre-bidding inspections as well as providing space for the auction spotters to maneuver around during the bidding process. The auctioneer's podium is located at one end of the sales ring floor and is double sided with operable windows to the auction staging and preparation area behind the podium.



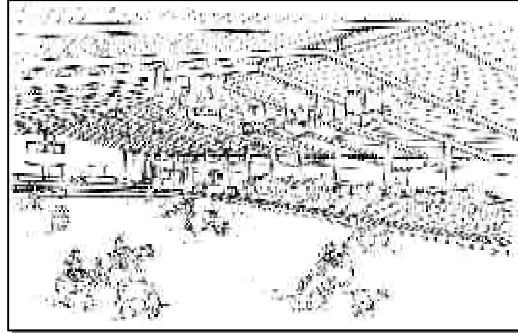
This allows for bids to be taken from this staging area as well. The staging or preparation area is for the viewing and preparation of the horses entering the sales ring floor and is connected directly to the indoor show ring floor.

Since much bidding activity occurs in the staging area, large screen live video feeds of the auction ring activities will be provided. In the event of a performance horse auction in which potential bidders wish to observe the horses work under saddle prior to bidding, the indoor show ring can be utilized for this activity. An auction office is provided near the auctioneer's podium to handle the transfer papers, sales receipts and cash, horse transportation, and includes lockable storage and data networking systems.

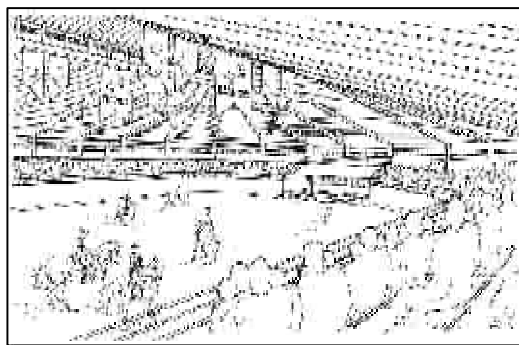


Another integral aspect of the Indoor Equestrian Show Ring facility is the indoor warm-up ring. This warm-up ring is vital to the equestrian competitor prior to the competition in order to warm-up their horses and assemble for classes or individual performances about to enter the show ring. The warm-up ring floor is 100 feet wide and 200 feet in length and is surrounded by a 20-foot wide circulation aisle around the perimeter. The warm-up ring is fully enclosed, but is equipped with overhead doors along the sides to allow the warm-up ring to be opened up during pleasant weather. This ring is flexible enough to use as a show ring for smaller shows not needing the larger main show ring. A covered breezeway connects the Indoor warm-up ring to the horse barns, which allows protected circulation for competitors during inclement weather. It is essential to

the viability of the Horse Park that event operations be capable of proceeding regardless of seasonal weather conditions.



As guests and visitors arrive at the Indoor Equestrian Show Ring facility, they are greeted with a large main entry foyer where they can gather and mingle prior to entering the seating areas. A ticket sales area is provided in this lobby area for the purchase of tickets for special events held at the facility, which may not be covered by a general admission to the park. A large space is planned in the main lobby area for vendors to set up exhibit booths for the sale of goods and services, typically related to equestrian/agricultural endeavors. Elevators and stairs will provide patron access to the seating areas, restaurant, lounge and private party rooms. Scattered around the main concourse and seating areas, concessions, restrooms, and vendor areas are provided.



Below the seating and concourse decks, and at the show ring floor level, are livestock circulation lanes and holding pens. This allows for horses and cattle to circulate behind-the-scenes to staging areas without interference with the spectator circulation or site-lines. It also allows for holding pens and return lanes for cattle and other livestock to be utilized during rodeo, cutting and roping events without interruption to the show ring activities. A large covered area at one end of the facility allows additional livestock holding pens and lanes, as well as unloading and loading of livestock. A large service area is provided adjacent to the covered livestock area for easy unloading and loading of livestock pots, with plenty of room for these tractor-trailers to park. In addition, this lower level contestant / livestock circulation area, restroom and dressing facilities are provided for competitors, a first-aid room, and a show / events office complete with a show officials lounge and a sponsors lounge, as well as miscellaneous storage and mechanical/electrical rooms.



The Indoor Equestrian Show Ring facility is a fully enclosed, climate-controlled structure for all weather usage. Extensive lighting, electrical, communications, and data systems will be included to provide for multi-media capabilities for televised events and video, as well as stage rigging and facilities for multi-use events. The latest technology will be utilized for the public address and announcing communications, visual electronics devices, and signage, providing the spectators an exciting and enjoyable experience.



Main Outdoor Equestrian Show Ring



The main Outdoor Event Arena is located adjacent to the east side of the Main Indoor Equestrian Show Ring on the north side of the central pedestrian promenade. This facility features a 150' x 300' arena floor, with an elevated, covered grandstand along the south side.

The grandstand has been programmed to accommodate 2,025 people with chair-back style bleachers. A fabric tensile shade structure is designed to cover the seating area, providing shade for spectators. A wide spectator service concourse housing ticketing, concessions and toilets is located behind the seating for circulation in and around the arena and the pedestrian promenade areas. An elevated official / announcer stand is located on the north side of the ring, allowing officials unobstructed views of the competitors. To the west of the Outdoor Equestrian Show Ring, a 100' x 200' outdoor practice ring is provided for exhibitors to warm-up and assemble for classes. Along with large fabric tensile shade structure over the seating area, the materials proposed for use on the exterior are decorative concrete and brick masonry units, glazed brick and decorative steel railings.



Outdoor Show & Practice Rings

Twelve Outdoor Show and Practice Arenas are spread throughout the Equestrian Zone to support multiple concurrent events as well as the practice and warm-up areas required to support the events. Each arena can serve not only for practice, but also for additional arenas for large events, or for small individual shows. Seven of the arenas have dirt/sand footings and are 150'x300' in size. Two smaller 100'x200' dirt/sand arenas are planned as warm-up/staging for the larger outdoor arenas. Two grass hacking/dressage arenas and one dirt/sand arena are located within the track infield, along with the grass Grand Prix field. Small concessions with toilets, show offices,

officials stands and bleachers to accommodate 200 people are provided at each 150'x300' outdoor arena. Each arena is equipped with lighting for evening performances and/or practice, and a perimeter watering system for dust control. The arena footing for all arenas should meet the standards of the equestrian community. Four 60' diameter round pens are also provided near the Horse Barns and the Outdoor Arenas for horse exercising and practice.

A 420'x410' grass Grand Prix field is located within the steeplechase infield and would be used for Grand Prix jumping, driving and hunter events. The Grand Prix field features 2,000 permanent bleacher seats built into the inner banking of the exercise track (inner track) at the south end of the field, which are programmed to include retractable fabric shade covers. Additional portable bleachers may be placed along the west and east sides

of the field. A combination event office, toilet and concession building is located on the north end of the field. The field would be equipped with electrical and water hook-ups at the perimeter for tents to be erected for



festive occasions and during major steeplechase events.

On the remaining acreage west and south of the Equestrian Zone, an Olympic-caliber cross-country / combined-driving course, riding trails, and multi-use recreation fields are planned. The western portion of the overall site features rolling hills, meadows, natural bowls offering excellent spectator viewing areas, watercourses, and woods, providing extensive opportunities for challenging cross-country jumping obstacles and interesting trail riding features. It is also anticipated that the Horse Park will be connected to the Anne Arundel County / Annapolis Waterworks Trails network via future extension of trails along the historic railroad right-of-way that once connected Baltimore, Washington and Annapolis.



Steeplechase & Training/Exercise Tracks

A one-mile turf steeplechase course is located at the east end of the central pedestrian promenade. A 3/4 –mile dirt or fibre-sand training track is positioned within the steeplechase course. The steeplechase course features a covered grandstand seating up to 1,500 spectators, with toilets, concessions and offices below and behind the seating deck. This is proposed to be a masonry structure with a fabric tensile structure shade canopy, matching that of the Main Outdoor Equestrian Show Ring. Gently sloping earthen berms surround the steeplechase course, offering virtually unlimited spectator capacity, as well as ample space for special event tents.



The 3/4-mile training track will be utilized to support steeplechase events and race horse sales, as well as many Horse Park users for exercise and breezing. This track is also an FEI requirement for World Cup and Olympic host venues.

Horse Barns (for equestrian event rental)

Seven (7) Horse Barns housing a total of 840 permanent horse stalls wrap around the northwest end of the Main Indoor Show Ring. Five of these barns, located north of the Main Indoor Ring, house 120 10'x12' stalls, totaling 600 stalls. Two additional barns, located west of the Main Indoor Ring, house 120 12'x12' stalls, totaling 240 stalls. The Master Plan includes the capability for the construction of two additional 120-stall Horse Barns should the needs arise in a future phase and would bring the total stalling capacity to 1,080 stalls.

The stalls are laid out in a transverse orientation with a main 20' wide center aisle and 12' wide aisles between the stalls. A 10' wide aisle is provided along the exterior perimeter of the stalls groups. Eight 10' x 12' wash bays are provided on the west end of the barns, with mechanical rooms containing water tanks and equipment. Men's and Women's Toilet / Dressing Rooms are provided at the east end in each barn for exhibitors. Each Toilet / Dressing Room is equipped with showers, changing areas and janitor's closets. The horse stalls are programmed to feature core-filled CMU (concrete block) walls and full view mesh stall front panels with a 4' wide



sliding stall door. Each stall is provided with a 20amp duplex GFI receptacle with dustproof covers. Asphalt flooring is utilized throughout the barns for easy maintenance and cleaning. The Horse Barns structures will consist of a pre-engineered steel frame, with a standing seam metal roof to match the other Horse Park facilities. A clerestory with operable louvers along the ridge will provide good natural ventilation. Radiant in-floor heating systems, supported by the Central Plant, will provide adequate heat for year-round operations. Entry porticos define the entry to each barn and includes identifying signage along the portico roof. Three-sided concrete manure bins are located at the west end of each barn for daily manure disposal and provide easy access for removal of the manure from the barn area.

Under the initial development proposal, provisions have been made for the erection of temporary stall tents in the case a large show requires additional stalls. These tents, located north of the large barns, could house up to 160 horses. Water and power hook-ups to service these temporary facilities will be provided in an island along the trailer parking and barn areas. These island areas will also provide 40 hook-ups for RV's.



Wide unloading and loading lanes are located next to each barn for convenient unloading of horses and equipment near the stalls. After unloading, trailers are parked in a lot located just to the northwest of the stable area. The trailer parking area is a large open lot with plenty of maneuvering room for large trailers. Individual exhibitor vehicle parking spaces are provided next to the barns, throughout the stable area, as well as a small lot north of the horse barns.

Equestrian User Storage Building

A large storage building is provided in the midst of the barns, north of the Main Indoor Show Ring, and is divided into individual storage rooms. The rooms are leased by local equestrian groups to store their equipment such as jumps, barrels, poles and trail equipment. The building contains four 20' x 20' rooms and eight 10' x 10' rooms. Large overhead doors are provided to access each room and bollards protect the openings from damage. The building is proposed to be constructed utilizing a steel structure with a masonry veneer and metal roofing to match the overall architecture of the Park.



Historic Zone and Agricultural Education Center Design Concept (Former USNA Dairy Farm Facilities)

The operations facilities of the former USNA Dairy Farm are located on a ridge at the north corner of the site. This grouping of farm buildings, housing, and outdoor facilities are ideal for redevelopment into an educational-based working agricultural village. Most of the masonry barns, cottages, and silos are in good condition and several structures have been recently restored, including two barns and a picnic pavilion with toilets. The Master Plan proposes that approximately 50,000 square feet of historic structure be restored to serve both educational and working animal housing exhibits servicing the Horse Park. Some of the proposed functions include:

- Former housing (9 cottages): restored to provide on-site lodging in support of the education conference center and VIPs;
- Historic Zone visitors' center;
- Commissary, gift shop & ice cream parlor;
- Dairy Farm historic exhibit building;
- Multi-use event hall;
- Livery stable and carriage house;
- Horse Park mounted patrol
- Petting animal barn; and
- Historic Zone carriage station



A new 3,500 square foot education conference center seating approximately 150 people will be added to support the educational mission of the Horse Park. This facility will be located south of the cottages at the edge of the ridge overlooking the Equestrian Zone facilities in the distance to the south. This facility will also overlook an outdoor demonstration arena, allowing conference attendees to view equine demonstrations from inside the facility. This facility will serve the education mission of the Horse Park, hosting events such as show official training, veterinary symposiums, livestock judging seminars, youth livestock and agricultural functions, 4-H meetings and competitions, and other agriculture and equine education events.

It is the intention of the Master Plan and Program that the Historic Zone remain a working farm facility. All of the animals required to support the Horse Park, such as carriage and mounted patrol horses, will be housed in the existing structures. The existing cattle pastures will be appropriately improved to provide ample grass pastures and turn-outs for these resident animals.



Operations & Maintenance

The Maintenance and Service Area is located at the southern edge of the Historic Zone and utilizes approximately 21,228 square feet of existing USNA Dairy Farm buildings. All of the maintenance equipment and vehicles is stored in this area and is where routine servicing is performed. A portion of the Maintenance Building is utilized for hay and bedding storage, which is sold to exhibitors during events. A large fenced maintenance yard surrounds the service building, and is where maintenance vehicles are parked and where various facility equipment is stored. A bulk dry storage building is provided in this area for the storage of maintenance supplies, as well as overflow storage of manure in the event the site cannot be accessed by waste disposal trucks or other unexpected event. A maintenance office, breakroom, tool storage and restroom facilities are also provided in this facility.

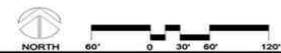
Feasibility Study
Maryland Horse Park
and
Agricultural Education Center
The Historic Zone Enlarged Site & Facilities Plan



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Maryland Horse Park

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VI. Environmental Considerations



VI. Environmental Considerations

General

The Maryland Stadium Authority understands the importance of this project's impact on the environment. The MSA has and will continue to go the extra mile in designing a green project with environmental concerns as a major driver in decision making.

Existing Conditions

The existing site is split between two different watersheds. The majority of the site (central and western portion) is within the Towsers Branch watershed and the remainder (eastern portion) is within the Jabez Branch watershed. Towsers Branch runs along the USNA Dairy Farm western boundary of the site and there are two unnamed tributaries from the USNA Dairy Farm that meet at a confluence in the vicinity of the southwestern corner of the site. The 100 year floodplain for Towsers Branch is located along the western side of the property; however, it is not within the primary area of development for the proposed Park. One Towsers Branch tributary is located central to the site with some natural vegetation acting as a buffer. The other tributary is located along the southern boundary of the site, in the vicinity of the BGE substation. Jabez Branch is classified as a USE III stream and is located east of the site. With the site primarily covered by agricultural fields, existing on-site drainage is typically provided in the form of surface drainage ditches throughout the site.

Proposed Conditions

The proposed storm drain system should attempt to utilize open drainage systems as much as possible. This will assist in minimizing the number and size of stormwater management facilities required for the Park; however, the proposed storm drain system

will likely utilize piped storm drainage systems in some of the central areas due to limited space and the need to provide manicured and equine and human accessible property. The proposed drainage system should follow the existing drainage patterns of the site in order to simplify stormwater management requirements. The existing drainage patterns of the site are divided into 5 total drainage areas identified on Drawing CS-1. These facilities are sized based upon preliminary site data and Maryland Department of the Environment's (MDE) guidelines for a wet extended detention facility and are included in the cost estimates. These types of facilities could contain permanent pools (6-8' deep) of stormwater that permit re-use for irrigation, and as an integrated element of the competition venues of the Horse Park. In the Jabez Branch watershed areas, stormwater facilities will need to be designed using a reduced detention time of 12 hours (in lieu of the standard 24 hours) according to USE III stream criteria. In addition to the MDE's involvement, modifications to the existing tributaries and drainage courses may require coordination and approval through the US Army Corps of Engineers.

Other possible methods should be studied and reviewed with the MDE to determine their feasibility for minimizing environmental impacts due to proposed development. Parking lots constructed with porous pavement are an example of a design solution that may reduce the size of stormwater management facilities. Other options may include bio-infiltration swales, use of native cover vegetation to lengthen time of concentration, and even architectural design features to reduce stormwater loading.

Attached is a letter from RKK Engineers detailing the environmental intent of the project, along with an initial stormwater plan.

May, 2006

Feasibility Study
Maryland Horse Park
and
Agricultural Education Center



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February 15, 2006

Mr. Gary McGuigan
Maryland Stadium Authority
The Warehouse at Camden Yards
333 West Camden Street, Suite 500
Baltimore, Maryland 21201-2435

Re: Maryland Horse Park

Dear Mr. McGuigan:

The design team for the Horse Park was asked by the Maryland Stadium Authority to summarize current plans relating to environmental issues and impacts of the Horse Park at the Dairy Farm site.

Stormwater Management

Included in the proposal is a conceptual stormwater management plan that identifies preliminary locations and sizes for stormwater management facilities. The size of these facilities was determined using the Maryland Department of the Environment's latest stormwater management design guidelines that will apply to all potential redevelopment of this site. These design guidelines include specific criteria for stormwater facilities within the Jabez Branch watershed due to its classification as a USE III stream.

The existing and proposed stormwater study points consist of five separate drainage areas that discharge stormwater runoff from the site. For the proposed conditions, a separate stormwater management facility, providing both quantity and quality control, was provided in each of the five drainage areas. In order to estimate the size of these stormwater facilities, the computation of proposed impervious area was based upon the project's program and quantities taken from the conceptual drawings.

The existing site does not have any formal stormwater control measures. A large portion of site is currently utilized for corn and soybean fields, as well as other annual grains. The concept plan provided for the Horse Park replaces these grain fields with meadow, hay field, and event lawns, with the expectation that these uses of perennial/continual grass cover will assist in the control and filtering of erosion and sedimentation of the waterways.

Baltimore, MD Raleigh, NC Concord, NC Virginia Beach, VA Richmond, VA Staunton, VA
Dover, DE York, PA Norristown, PA Keyser, WV Washington, DC





Rummel, Klepper & Kahl, LLP

Mr. Gary McGuigan
Maryland Stadium Authority
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While the parking and roadway is illustrated in a monolithic, all-paved nature, the final design approach will take into consideration any and all opportunities to include low-impact development techniques and technologies to optimize the pervious area, such as infiltration strips, bioswales, and pervious pavement where feasible.

Nutrient/Waste Management

We anticipate not more than 30 horses will reside on the grounds, which is substantially less than the current number of cattle. The park is primarily designed for horses to participate in events and leave after the events. The events typically last two to four days. Unlike cattle operations, all manure on site including the resident horse areas will be picked up and removed daily. In the event stabling, manure will be cleaned from the stall daily, stored for not more than one day in covered manure bins, and removed from the site. Furthermore, innovative wastewater technologies, such as nutrient recycling systems and tertiary treatment will be considered in future studies as project planning efforts continue.

Infrastructure (Utilities/Transportation)

Based upon preliminary utility demand estimates for the Park, the existing public sanitary and water systems appear to have sufficient capacity. This is based upon meetings and existing utility capacity information provided by the Anne Arundel County Department of Public Works. The Project Team met with Anne Arundel County DPW during the development of the feasibility study in order to obtain available information on the existing public utility systems. Further studies and analysis will be conducted as the planning process continues.

A Traffic Impact Study (TIS) was submitted to SHA for review. After reviewing the TIS, SHA provided comments that did not suggest there was an adverse impact to any of the alternatives that SHA is studying for MD3 improvements. Proposed traffic mitigation improvements are included in the Horse Park conceptual plans to address traffic demands associated with the Park. A final TIS is expected in March.

If the project moves into the next phase, the project team will evaluate and refine the conceptual plans as appropriate to minimize environmental impacts.



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The architecture of the new facilities will capitalize on the rural environment experience, utilizing natural materials such as native stone, wood, and slate. It is also anticipated that these facilities will be designed according to U.S. Green Building Council LEED guidelines for sustainable design. It is the intent of the planning team to create not only the best equestrian facility in North America, but also a model for the world regarding environmental concerns, energy conservation, and historic preservation.

Very truly yours,

RUMMEL, KLEPPER & KAHL, LLP

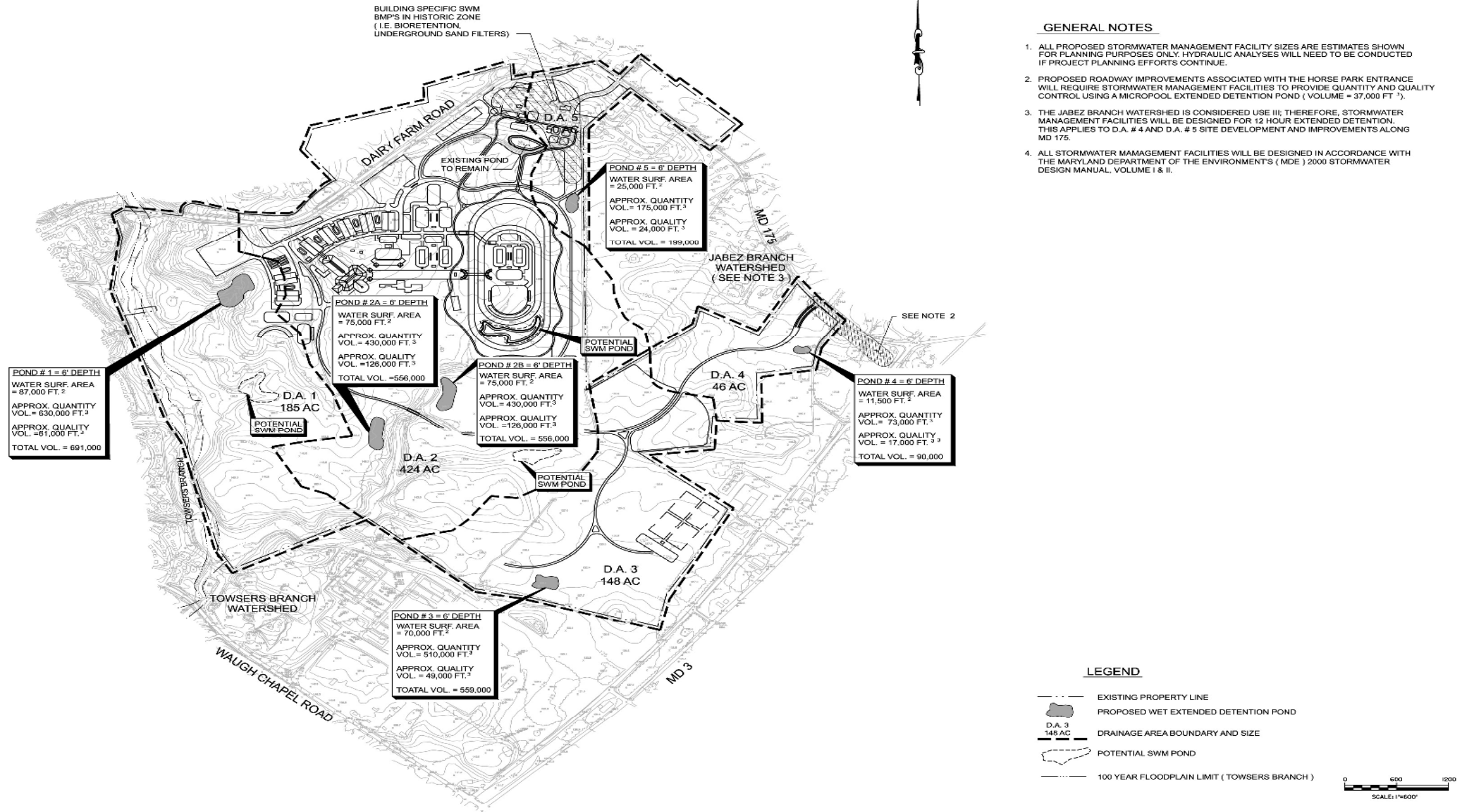
A handwritten signature in cursive script, reading 'John A. d'Epagnier'.

John A. d'Epagnier, P.E.
Associate

JAD/pds

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cc: Jonathan Fishman, RCG
Todd Gralla, Gralla
Roger Courtenay, EDAW



MARYLAND HORSE PARK - PROPOSED CONCEPTUAL STORM WATER MANAGEMENT PLAN

SCALE: 1"=600'-0"

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MARYLAND HORSE PARK
GAMBRILLS, MARYLAND
PROPOSED CONCEPTUAL
STORM WATER MANAGEMENT PLAN

DATE : NOV. 22, 2005

DRAWING NO.

CS-1

VII. Operations & Management Structure



VII. Operations & Management Structure

General

The Maryland Stadium Authority would be responsible for the management, operation, maintenance and repair of the Maryland Horse Park, with the advice of the Maryland Horse Industry Board, through a combination of its own employees and outside contractors.

The Maryland Stadium Authority – A Track Record of Sensitivity to History and Environment

The Maryland Stadium Authority is uniquely qualified to oversee the design, construction, management and operation of the Maryland Horse Park. As an example of its impressive preservation and adaptive reuse of historic structures, the Stadium Authority incorporated the historic B&O Warehouse (then a badly deteriorated storage building), in the design of Oriole Park at Camden Yards and gave new life to the 100-year-old structure by restoring it into office, retail, and meeting/event space. The combination of the historic warehouse with an “old-fashioned,” yet state-of-the-art ballpark resulted in internationally acclaimed Oriole Park at Camden Yards integrated into the fabric of downtown Baltimore. Known both for its unique design and its high standards of repair and maintenance, Oriole Park remains a model for other sports venues throughout the world.

More recently, the Maryland Stadium Authority oversaw the historic renovation of the Hippodrome Theater, returning this once elegant structure to its former prominence and creating the cornerstone for economic revitalization of Baltimore’s west side. Restoration of the historic Camden Station, at the gateway to the Camden Yards Sports Complex, incorporating two exciting new museums and a retail operation, is another Maryland Stadium Authority historic preservation achievement.



The Maryland Stadium Authority has a well deserved reputation for quality restoration and responsible project and property management. Utilizing public/private partnerships, sponsorships, and bond sales to finance its projects, the Stadium Authority has protected the excellent AAA bond rating enjoyed by the State of Maryland.

All Maryland Stadium Authority projects recognize the importance of community involvement. The input received from neighbors, local organizations and others has been a hallmark of the long term acceptance and success of its projects.

Horse Park Operations



The Maryland Horse Park will be a large, public, open space facility with features similar to a state park. Like many state and local recreation facilities, the Maryland Horse Park will have a “friends” organization to advise and support the park. This group will consist of neighbors, environmentalists, sports enthusiasts, local historians, and others with an interest in this historic, multi-use property. Another function of the “friends” organization will be to coordinate the services of volunteers as guides, trail monitors, gardeners, information specialists and historic interpreters.

In addition to the "friends" organization, the Maryland Stadium Authority and the Horse Industry Board will create a task force consisting of representatives of residential and business communities, the U. S. Naval Academy, Anne Arundel County government, and State officials to develop guidelines for the operation and use of all elements of the facility.

The primary function of the Maryland Horse Park will be for equestrian events, and as such will be given priority in scheduling. Non-equestrian activities would be booked during slow periods, and account for the balance of events booked for this facility. These kinds of events may include high school graduations, home and garden shows, community sports related competitions, arts and craft fairs and animal (dog, cat, ferret) shows.



Bill the Goat will remain as the resident representative of the Navy's continuing presence at the farm. "Team Bill" and the Academy's game day rituals will be incorporated into the park's activities to promote the traditions of Navy's athletic program.

Activities such as art exhibits, catered events, lectures and educational activities relating to the agricultural community will be scheduled in the Agricultural Education Center at the Horse Park site.

Showcasing History – The Agricultural Education Center

Unlike other proposals for use of this location, the Maryland Stadium Authority will fully integrate the historic farm as a showcase of the agricultural history of Anne Arundel County and the Naval Academy.



The USNA Dairy Farm played an important role in the advancement of nutrition, public health, scientific discovery and the development of the County. The original use of the site as the Hammond family homestead, the dairy farm's relationship to the growth of the area, the railroad operations connecting Baltimore and Annapolis, the addition of the Fort Meade army base, and other items of interest will be shared in the museum.

The farm complex will become a living museum depicting the site's agricultural heritage and providing visitors with educational information. The presence of the 4-H dairy club, another ongoing Anne Arundel County institution, will continue and flourish if the Maryland Horse Park becomes a reality at this location. This organization provides a vital educational opportunity for those who have never seen a cow, understand where milk comes from, or how cows are cared for by their owners.

The area designated for the 4-H group will have storyboards and displays about the local dairy program. Children visiting the 4-H area will have much to gain from this “real life” experience, especially in this era where children have increasingly limited access and connection with the natural world.



Environmental Stewardship

Environmental stewardship is an important message which is conveyed in every aspect of the Horse Park. As envisioned, the Horse Park will not only be a national model of adaptive and sensitive reuse through historic preservation, but also an example by constructing to the U.S. Green Building Council’s LEED standards, retrofitting landscape to incorporate stormwater management practices critical to the watershed and its fragile tributaries.

Another environmental element of the Maryland Horse Park will be the use of native vegetation and attempts to restore endangered species, such as the American chestnut tree. The health of the Jabez Branch will be restored and protected. This achievement will be included in Horse Park exhibits depicting the landscaping, native vegetation, creative water treatments abating runoff and utilization of pervious surfaces and gray water techniques to improve the environment.

Employment and Contractual Services

At least two years before its opening, the Maryland Stadium Authority would employ a small staff to develop marketing and planning strategies for the Horse Park in order to ensure that the Park is fully utilized as soon as it is ready. Immediately prior to the opening of the Horse Park, it is anticipated that 50 full-time and 20 part-time employees will be hired to ensure the Park's smooth operation. The positions will include individuals with expertise in the following areas:

A Director of Administration will oversee the administrative staff and have complete responsibility of all aspects of the park. The Director will report to the Maryland Stadium Authority Executive Director and Board on policy matters and will seek approval of contracts in accordance with the Maryland Stadium Authority procurement policies and procedures.

An Assistant Director will oversee Horse Park personnel and will be authorized to act in the absence of the Director. A Public Relations Officer will be responsible for ensuring that visitors to the park are satisfied with their experiences, and that the Horse Park is actively promoted. This person will also act as liaison between the Horse Park, Anne Arundel County, the local community, and the Navy.

A Financial Officer will prepare proforma's and provide financial reports. The Financial Officer will also be responsible for all procurement and financial transactions at the park. A marketing staff of six people will book park facilities and services. This will include the equine related use, conference facilities and educational buildings in the historic zone.

The marketing department will also coordinate community usage of park facilities, including the soccer fields.

The grounds will be kept to a Class A standard under the supervision of an operations manager who will not only supervise the mechanical, electrical, plumbing and audio/visual departments but also administer the contractual services needed to upkeep the facility.

It is anticipated that thirty-eight positions will be needed to maintain the park's high standards. Typical work will range from landscaping, trail maintenance and cleaning stables to the engineering support required for a large campus. Thirty event staffers will coordinate daily activities of the park users to ensure an enjoyable experience for all visitors.

The total payroll for staffing the Park is estimated at \$3.4 million annually.

In addition to the permanent staff, contractors will be needed for the successful operation of the Park and will include expertise in many areas. The following illustrates a few examples:

A janitorial company will clean the buildings and grounds daily and after hours, to ensure a fresh look each morning. Traffic and parking management will be contracted for the occasional large equine shows and steeplechase races. As these events are infrequent, these services would be outsourced.

Trash removal will occur several times per week and manure disposal daily during heavy and peak park usage. A contractor would provide round the clock surveillance and security for the park, not only to protect its assets and further public safety but also to improve the community's security.

Facility Revenue



Revenue from the park will be derived from multiple sources. It is anticipated that the majority will be collected from out-of-state visitors, which will allow low cost use of the park by the local community and educational groups.

Visitors to the horse park will be charged a parking fee, projected at \$5.00 per car, for the normal operational day. Visitors will be directed to the visitor's center where they can decide which activities to participate in or observe. Museum admission is expected to be a blended total price of \$9.00 per person. Most of the venues available for spectators will be free, except for specialty events like a steeplechase or a national equine show.



Users of the equestrian event facility will pay a stall rental fee at an average of approximately \$20.00 per stall per day. Rent will be collected from the event organizers for use of show rings, the cross country course and the indoor equestrian center. Banquet/catering fees, parking, museum admissions, educational programs, meeting room rentals, trailer hook-ups, event admissions, sponsorships, equipment rentals, equine merchandise sales, and cottage rentals are additional sources of income.

Fees assessed for local 4-H and pony clubs as well as educational programs that serve the community will be at reduced rates. Residents of Anne Arundel County also will pay reduced rates for Park programs.

As many of the anticipated 800,000 visitors are from out of state, a significant impact will be achieved outside of the Park. These park visitors will stay in hotels, eat at restaurants and purchase goods and services for themselves and their horses. A majority will be visiting Maryland because of the Horse Park. Their spending will bring in new tax revenue to the County and State.



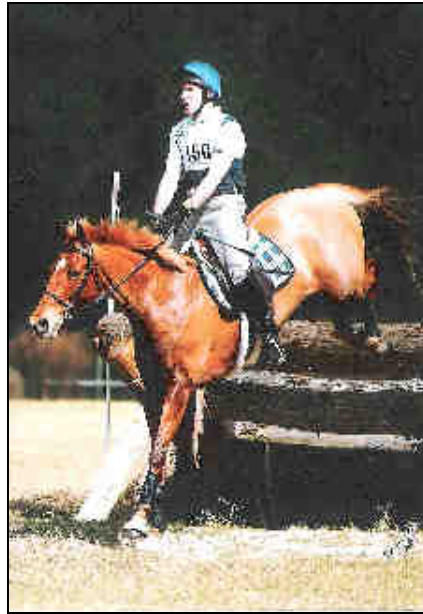
Marketing

The Maryland Horse Park, because of its prime location at the center of the State's horse population, will become the promotional center for all non-racing horse related activities in the State.



These activities could range from jousting at the nearby Renaissance Festival and Medieval Times Restaurant to seasonal activities including the Roedown steeplechase, Gold Cup Timber Races and the Assateague pony penning. Brochures and information on these and other nearby events and activities will be distributed at the Horse Park. For example, materials on the origins of horse racing in the American colonies will be available at the Horse Park and visits to Annapolis (where it all began) and Laurel (where it continues today) are only a few miles away. Also in nearby Crownsville is the Maryland Therapeutic Riding Center, a facility where horses help to heal and instill confidence in those overcoming disabilities. The Maryland Horse Park can play a valuable role in dispensing information on this important program.

The Horse Park will also direct interest to Southern Maryland, for the opportunity to see horses still pull Amish plows and buggies. In Baltimore, visitors may observe horse-drawn carts used by vendors selling produce on the streets or City on specially trained mounts ensuring public safety. Throughout Maryland, horses provide recreational and athletic opportunities for residents and visitors. The Maryland Horse Park's location will be ideal to promote the wide variety of activities encompassed by the horse industry. Rather than competing with existing horse related businesses, the Maryland Horse Park will be a catalyst to stimulate and enhance the diverse components of the industry so vital to Maryland's economy.



As the Horse Park evolves into a destination location for the equine experience in Maryland, its impact on the hospitality industry and its member organizations will be significant. As sailors come to Maryland for its harbors, the Chesapeake Bay and the Atlantic Ocean, riders will come to Maryland to train, compete and enjoy the trails and other equestrian events available here.

Attraction of Equestrian Tourists and Competitions

The Maryland Horse Park will be designed to accommodate a variety of equestrian sports unparalleled in the United States and perhaps the world. These potential facility users will come to Gambrills, Maryland because it sits in the center of what many consider to be the birthplace of American equestrian sports. This land was once some of the most sought after equestrian property in the world.



To the north of Gambrills sits Baltimore horse country, some of the most fabled horse land in the world. While most people know of Baltimore's history as the home of Pimlico Race Course and Thoroughbreds racing in the Preakness, the track also saw the first recognized steeplechase race run in America on October 18, 1873. North of Pimlico in Baltimore County, steeplechase races rose from competition between various fox chasing clubs.



To the south and east of Gambrills sit Upper Marlboro, Annapolis, and Ft. Washington. According to the personal diaries of George Washington, he was one of the first to wager money at the Marlboro Race Track in Upper Marlboro. Moreover, Annapolis,

which for American horse sports is termed the place where “it all began,” was the home of the first organized racing oval in the Americas. While Thoroughbreds might have attracted our forefathers to the area, since 1949 Standardbred horses have drawn spectators from around the country to Rosecroft Raceway in Ft. Washington.

To the west of Gambrills lies one of the sites at which the sport of Dressage was founded in the United States. The Potomac Valley Dressage Association (PVDA) is one of the oldest dressage clubs in the United States. Founded in 1964 in Gaithersburg, MD, the names of PVDA members in the past and present read like an American equestrian "who's who." Today, PVDA's membership encompasses dressage enthusiasts in Maryland, Virginia, the District of Columbia, West Virginia, North Carolina, Pennsylvania, Delaware and New Jersey. However, this Maryland-based organization has been forced to host its regional and State championships in Virginia in recent years, because of a lack of adequate Maryland facilities.

Immediately, to the south of Gambrills is the town of Bowie, home to Bel Air Stables and Bowie Race Track. Bel Air Stables and Stud, once the oldest continually operated Thoroughbred farm in America, was the home of two Thoroughbred Triple Crown winners, Gallant Fox, and Omaha. Bowie Race Track which is still in operation today was once home to an active race track which hosted some of the most famous race horses in history and featured a rail connection which shipped horse racing enthusiasts from as far north as New York to this legendary track. That rail line connected to the rail bed located just to the north of the USNA Dairy Farm, and thanks to the Rails to Trails project will one day connect these areas once again, but not for train traffic, instead for equestrians, hikers, and bikers to enjoy while they learn about the rural heritage of central Maryland.

The entire history of Maryland and its connection to the horse will be honored at the Maryland Horse Park in such a way that the history of this region as the birthplace of American Horse Sports is not paved over with time and forgotten. The patchwork quilt



of Maryland's equestrian history will finally be linked back together permanently with the establishment of the Maryland Horse Park.

Facility offerings for all equestrian related activities

Besides its central location and appeal to visitors of all kinds, the Maryland Horse Park is being designed to attract equestrians from near and far. Some of the offerings which will attract local, state, national, and international user groups include:

State-of-the-art competition venues;

More than 840 permanent modern stalls, expandable to 1,080 stalls, which will be built to increase the safety of the horses housed within them and the facility users, taking into account best design practices to reduce the chance of fire or disease proliferation;

Modern barns that will be open air, but will be able to be closed in times of inclement weather;

Entry gates that will include a review of all pertinent animal health papers;

24 hour security services;

Easily accessible water, electricity, lighting and manure disposal facilities;

Parking to accommodate both large and small trailers, in close proximity to the areas where horses will be housed or exercised;

Trailer and R.V. hook ups to accommodate a limited amount of facility users;



On site hay, bedding, and grain sales with adequate on hand supply for all on site competition needs;

On site equipment and tack sales to accommodate on site competitions;

Lab and surgical areas for horse health emergencies;

Fencing encircling the entire facility to contain all animals on the property;

Adequate areas for farrier services built to accommodate multiple horse shoeing rigs; and

Permanent publicity and promotional services which will work to attract spectators and competitors to the Maryland Horse Park;

Specific Equestrian Sports

In addition to the facilities usable for all equestrian users there will also be sport specific facilities built to accommodate the needs of these sports.

Horse Training, Hacking, and Schooling

This facility will be utilized by local horse operations for year round exercise and schooling activities, thereby strengthening agricultural production. As such all of the activities related to equine and all of the associated equestrian facility offerings in the Maryland Horse Park plan may be classified as equestrian training facilities.



Carriage or Driving

In driving, traditionally a buggy, carriage or wagon is pulled by a single horse or tandem (team of horses). The pleasure competitions are judged on the turnout/neatness of horse and buggy. These activities will primarily utilize the outdoor riding rings, including the grass fields, and the Grand Prix arena, as well as the carriage trails that encircle the equestrian areas of the park. It was indicated in the survey of potential user groups that there is a dire need for areas to accommodate driving events.

Collegiate Programs

In the United States there are a number of equestrian organizations governing collegiate equestrian competition including the Intercollegiate Horse Show Association, the International University Equestrian Federation, the National Collegiate Athletic Association, the Interscholastic Dressage Association, and the American National Riding Commission. In fact, the United States Naval Academy has a collegiate team currently training out of Clay Hill Stables in Prince Georges County, Maryland. To date the Naval Academy has not experienced the competitive success of the United States Military Academy's Army Equestrian Team. This facility will allow the Navy to have a first rate training facility at which they can hone their skills and competitive acuity while incorporating Bill the Goat into their game day activities. These competitions will utilize both the indoor and outdoor riding arenas, and could be used by all nine of the Maryland Collegiate Equestrian Programs, mounted and unmounted, including the USNA, the University of Maryland, Washington College, St. Mary's College of Maryland, Mount St. Mary's University, Johns Hopkins University, Hood College, Goucher College, and Cecil Community College, perhaps even allowing the Navy to one day host an Intercollegiate National Championship. In addition to the riding activities offered for College students, there will also be the opportunity for jobs, internships, seminars, and educational opportunities made available through the creation of the Maryland Horse Park.

Combined Driving

Combined Driving is very much like the ridden sport of Three Day Eventing, but with a carriage behind the horse. There are three separate phases, and one is completed each day, over three days of competition. Each phase tests the training and ability of both horse and driver in different ways. They test the balance, flexibility, and submission of the horse as well as the drivers memory of a test, the horses endurance and stamina over distance, both horse and drivers ability to use their dressage skills driving through hazards (obstacles), and precision driving between sets of cones laid out in an elaborate course. These activities will utilize the outdoor riding rings, including the grass fields, and the Grand Prix arena, the carriage trails that encircle the equestrian area of the park, and the cross country course on the southern end of the property.

Competitive Trail / Endurance Riding



Competitive trail riding involves riding over long distances with scheduled stops to take the horses' vital signs. This is an extremely strenuous sport, requiring the horse to complete, at the top levels, up to 100 miles. Typically, winning riders complete these 100-mile rides in 10 to 12 hours. Any breed can compete, but Arabian horses generally dominate the top levels because of their incredible stamina and natural endurance abilities. There are currently endurance rides world-wide, and many countries are gaining interest in the sport, with many of the top riders and horses originating in

Maryland and throughout the United States. Eventually, with the completion of the Rails to Trails connection on the North end of the property these competitions could be conducted out of the Maryland Horse Park and traverse trails from Gambrills to Annapolis and up through the Maryland greenway.

Dressage

Dressage involves the progressive training of the horse to a high level of impulsion, collection, and obedience. Competitive Dressage demonstrates the horse responding to natural movements while in motion. One Dressage master has defined it as “returning the freedom of the horse while carrying the rider.”

The sport of Dressage requires meticulous attention to detail. Each riding ring at the Maryland Horse Park will be designed to meet the exacting standards of this sport.

Dressage professionals will be consulted on all decisions regarding selection, installation and maintenance of footing. Multiple riding areas will be available to accommodate numerous levels of competition during any event. The number of arenas planned for the Park will accommodate a major Dressage competition, with warm up and exercise areas to prepare prior to performing. As noted previously, a lack of suitable facilities in Maryland in recent years has necessitated Regional and State Dressage Championships to be held outside Maryland. It is the intent of the Maryland Horse Park to bring these competitions back to our state.



Games

Games programs provide reinforcement of skills taught to young riders in a more relaxed environment. As the games players become more confident, competition becomes part of the program and adds a new dimension of incentive and excitement.

Perhaps the most interesting part of games instruction is the imperceptible improvement of riding confidence and skills. Games teach cooperation through the medium of team play and discipline. Games are fun to watch and do not require spectators to be familiar with the rules; the principles are quickly apparent to an inexperienced eye.



Parents of games players usually see a beneficial carry-over to other activities. As a result they become staunch supporters of the program once they become acquainted with it. Parents have written the rules and guides for games, invented inexpensive equipment, and volunteered endless hours organizing Regional and Championship competitions because they believe in the benefits of games.

These activities will be housed in the indoor and outdoor arenas of the Maryland Horse Park.

Gymkhana

A program of competitive games on horseback, usually timed events. See Games.

High School Programs

Maryland has seen a dramatic increase in High School equestrian programs, even as competition becomes more prevalent across the country. In Maryland, during the 2005-2006 school year, 46 schools were listed as having competed in the local Inter-School Horse Show Series. The Inter-School Horse Show series offers a unique opportunity for riders in grades 6-12 to gain experience in the show ring and be recognized by their school. Some schools recognize their riders as a team with financial support, varsity letters and a page in the yearbook; other schools recognize the activity as a club.

Nationally the Interscholastic Equestrian Association is now an affiliate of the Intercollegiate Horse Show Association, and is seen as the training ground for riders to obtain scholarships to compete in college and beyond. These activities would be housed in the indoor and outdoor arenas of the Maryland Horse Park, thereby offering more opportunities for local students to pursue activities not always available in a high school setting. Internships and service learning would always be integral parts of the Maryland Horse Park plan. Local students at Old Mill and Arundel High Schools, who currently ride at local stables such as Abington Farm of Crownsville or Equilibrium Horse Center of Gambrills, dream of a chance to continue their equestrian activities beyond high school. These students could utilize the Maryland Horse Park to realize these goals.

Horse Sales and Auctions (Thoroughbred, Standardbred, Sport Horse, Other Breeds and Recreational Sales)



Currently Fasig Tipton Company, Inc. sells over \$40 million worth of horses in Maryland each year. Unfortunately, adequate facilities to accommodate the company's projected growth do not exist. Therefore neighboring states have been courting them to relocate. By installing an auction pavilion and sales demo track at the Maryland Horse Park,

Maryland could retain this multi-million dollar company, increasing tax revenue in Anne Arundel County. The sales pavilion and track would be available for other uses, along with the arenas. The Park could become a market place for Maryland farmers and their products.

Hunters (Equitation, Huntseat, and Field Hunters)

Hunter competitions judge the form of the horse over fences. A typical hunter division would include a flat class, or hack class, in which the horse is judged on its movement. A typical “hack winner” would be known for its flat kneed trot and “daisy cutter” movement, a phrase coined since a good hunter could slice daisies in a field when it flicks out its toes. The jumping portion of the class is judged on the form of the horse and the smoothness of the course. A horse with good jumping form snaps its knees up and jumps with a good bascule (rounded topline). It should also be able to canter slowly with a step large enough to make it over a line of jumps. Hunter shows also offer equitation classes where the position of the rider is judged rather than the form or movement of the horse. Typical hunter competitions will utilize the indoor and outdoor riding areas of the park and require jump equipment, thereby creating a market for local manufacturers of these products. Survey responses indicated that local jump manufacturers are greatly interested in selling their products at the Park.

Hunter Pace

The Hunter Pace is a sport where a trained rider covers a course at speeds based on its condition and riders compete to match that ideal time. Hunter paces are usually held in a series, and are several miles long. With over 2.5 miles of trails located directly on the park grounds, the Maryland Horse Park will create the perfect environment for these activities.

Jousting

Jousting tournaments have been held in Maryland since early colonial times but became increasingly popular after the Civil War. Retaining the pageantry and customs of medieval tournaments, modern competitors are called “knights” or “maids”, and many dress in colorful costumes. Men, women and children compete equally with skill and horsemanship determining the class. Tournaments conducted in Maryland are “ring tournaments” which involve charging a horse at full-gallop through an 80-yard course toward suspended rings. Using a long, fine-tipped lance, the rider has 8 seconds to complete the course and “spear” the rings, scoring points accordingly. From three equally-spaced arches, rings are hung 6 feet 9 inches above the ground and range in diameter from one-quarter inch to nearly two inches depending upon the skill-level of the contestant. A family sport, jousting skills frequently are passed from one generation to the next. Jousting is the official state sport of Maryland, and it was the first official sport adopted by any state in the country. For this reason, jousting will be one of the central features of the Park. Individuals with expertise in this specialized area will guide design and development of appropriate facilities. Numerous organizations expressed interest in the project, such as the National Jousting Association, the Amateur Jousting Club of Maryland, the Central Maryland Jousting Club, the Eastern Shore Jousting Association, and the Western Maryland Jousting Club.

Polocrosse

Polocrosse is a team sport played by youth and adults around the world. It is a combination of polo and lacrosse (Maryland’s official team sport) played outside, on a field, on horseback. Each rider carries a stick with a loose, thread net racquet head where the ball is carried. The objective is to score goals by throwing the ball between your opponent’s goal posts. Unlike polo, players are allowed to play only one horse, except in the case of injury. Horses of all breeds play polocrosse. A team consists of 6 players, divided into two sections of three who play alternate chukkas of a maximum of 8 minutes each. Six or eight chukkas compromise a full match. The field is 60 yards

(55 m) x 160 yards (146.5 m), with three separate areas. The goal scoring areas, on each end, are 30 yards long. On the southeastern portion of the Maryland Horse Park there will be open areas available for polocrosse which are suitable for non-equestrian events such as soccer or football.

Rodeo

Rodeo is a traditional North American sport with influences from the history of Mexican vaqueros (cowboys) and American cowboys. Rodeo originated as an extension of the day-to-day lives of early American cowboys; branding cattle and riding and training young bucking horses made a natural progression to competition between the cowboys. Bragging rights about who could stay on a “bronc” horse went from passing the hat for the winner, to today’s large purses at competitions such as the National Finals Rodeo or the Bill Pickett Invitational Rodeo, named after the great African American cowboy, which typically attract large crowds. Rodeo events include the rough stock events such as bull riding, bareback bronc riding and saddle bronc riding. The timed events include steer wrestling, team roping, calf roping, the rarely seen steer roping, and women’s barrel racing, breakaway roping, goat tying and pole bending.

Saddleseat

Saddleseat (also known as Park or English Pleasure riding), a uniquely American discipline, was developed to show the extravagantly animated movement of high-stepping gaited breeds such as the American Saddlebred, Morgan and Tennessee Walker to best advantage. These events require facilities with enclosed arenas and connecting barns to protect horses and competitors from inclement weather.

Show Jumping

Show Jumping is a timed event, judged on the horse and rider’s ability to jump a series of obstacles in a given order, with the fewest refusals or knockdowns. At the Grand Prix level, fences may reach a height of six feet. While the Maryland Horse Park will have

more on the Hunter level, the Grand Prix field will be specially designed to accommodate the highest level of show jumping competition, which can attract a large audience (and international sponsorships.)

Specific Breed Events

Selective breeding of horses has occurred since man domesticated them. However, the concept of breed registries has gained greater significance during the 20th century. Horse breeds are as varied as dogs. While different breeds of horse specialize in specific sports, typically breed specific events will evaluate factors such as conformation or movement in relation to the breed standard. Organizations sponsor shows housed in either the indoor or outdoor riding areas. These events will complement the market for horses bred and trained in Maryland.

Steeplechase and Point-to-Point

The steeplechase is an event in which horses typically race several miles while jumping a variety of ditches and fences. Its name is derived from early competitions, where reaching a church steeple after clearing obstacles through the countryside defined the race. The most famous steeplechase event in the United States is the Maryland Hunt Cup. A maximum of three steeplechase races would be held each year at the Maryland Horse Park, only during daylight hours. They typically attract corporate sponsorship due to the upscale crowd of spectators. The Park will accommodate spectators on adjacent hills overlooking this one mile turf course of variable terrain. It is this world class design, as well as the Park's proximity to regional business centers, that will attract corporate sponsorship to benefit the local economy. Point-to-point races are smaller scale competitions, primarily for amateur competitors. These serve as training for future steeplechase champions.

Therapeutic Riding, Therapeutic Driving, Equine Facilitated Psychotherapy, and Paraequestrian

Therapeutic Riding is a growing and widely accepted treatment for a range of physical, mental, and emotional disabilities. The benefits of horseback riding are as numerous as the types of disabilities and conditions served. Research shows that students who participate in therapeutic riding experience physical, emotional and mental rewards.

Because horseback riding gently and rhythmically moves the rider's body in a manner similar to a human gait, riders with physical disabilities often show improvement in flexibility, balance and muscle strength. For individuals with mental or emotional problems, the unique relationship with the horse can lead to increased confidence, patience and self-esteem. The sense of independence found on horseback benefits all who ride. The therapeutic qualities of horseback riding are recognized by many professionals, including the American Physical Therapy Association and the American Occupational Therapy Association.

Riders are often able to compete at the national and international levels. In 1987 the first dressage World Championship was held in Sweden, and the first Paralympic Games were held in 1996. Para Equestrian Driving is also a World Championship Sport. Today there are over 38 nations from five continents competing in the Paralympic Games. Organizations such as the North American Riding for the Handicapped Association offers students with physical, mental, sensory, or emotional conditions the rewards of interaction and control of a horse or pony either ridden or while driving from a carriage seat or in their own wheelchair. Equine Facilitated Psychotherapy (EFP) is experiential psychotherapy that includes equine(s). It may include, but is not limited to, a number of mutually respectful equine activities such as handling, grooming, lunging, riding, driving, and vaulting. All of these activities would be featured at the Maryland Horse Park, and the development of wheel chair accessible riding areas would be a necessity. The Maryland Horse Industry Board, which developed the Maryland Horse Park concept, has donated grants to Maryland based organizations such as the

Frederick County 4-H Therapeutic Riding Program for the development of ramps and other facility upgrades for these types of activities. This trend would continue with the Maryland Horse Park, thereby increasing the regional activity offerings for handicapped individuals. Regional facilities without indoor riding facilities could utilize the Park so that the development of handicapped riders could continue year round regardless of the weather conditions.

Three- Day Eventing and Combined Training



Eventing, combined training, horse trials, “the military,” or “the complete test” (as its French name translates) put together the obedience of dressage with the athletic ability of show jumping, the fitness demands of a long endurance phase (a.k.a. “roads and tracks”) and the “cross-country” jumping phase. In the last-named, the horses jump over fixed obstacles, unlike show jumping, where the majority of the obstacles will fall down or apart if hit by the horse. This discipline was originally formed to train horses for the numerous challenges faced in battle as cavalry mounts. The sport of eventing is undergoing a dramatic upturn in spectator attention as was evidenced by the 2005 NBC broadcast of the Rolex Three Day Event. In 2005, the United States Eventing Association Area II (Maryland, New Jersey, North Carolina, Pennsylvania and Virginia) had 10,749 competitors. Competitions included 59 Horse Trials, 12 of which had over 300 competitors. Competitors at the beginner, novice, and training level Horse Trials numbered 7,020, more than twice the 3, 219 at upper levels, showing the strength of the

growing group of younger and new competitors. The Maryland Horse Park would be well designed to capitalize on this progress. The outdoor and indoor arenas can accommodate the dressage portions of competition, the Grand Prix arena is suitable for show jumping, and the endurance and the cross country course would be specifically designed for the jumping phases. Due to the required open space for this event, the majority of the Maryland Horse Park property will have to remain as pasture. One distinctive feature of the Maryland Horse Park design is the water complex with associated permanent stadium seating and an adjacent natural hill overlooking the complex. This feature, coupled with the attractive location in the heart of the Baltimore, Washington and Annapolis metropolitan area, will be unique in the world of Eventing. This could become a highlight for spectators from around the world, draw attention to the Maryland horse industry, and increase business for local Maryland horse farms.

Trail riding

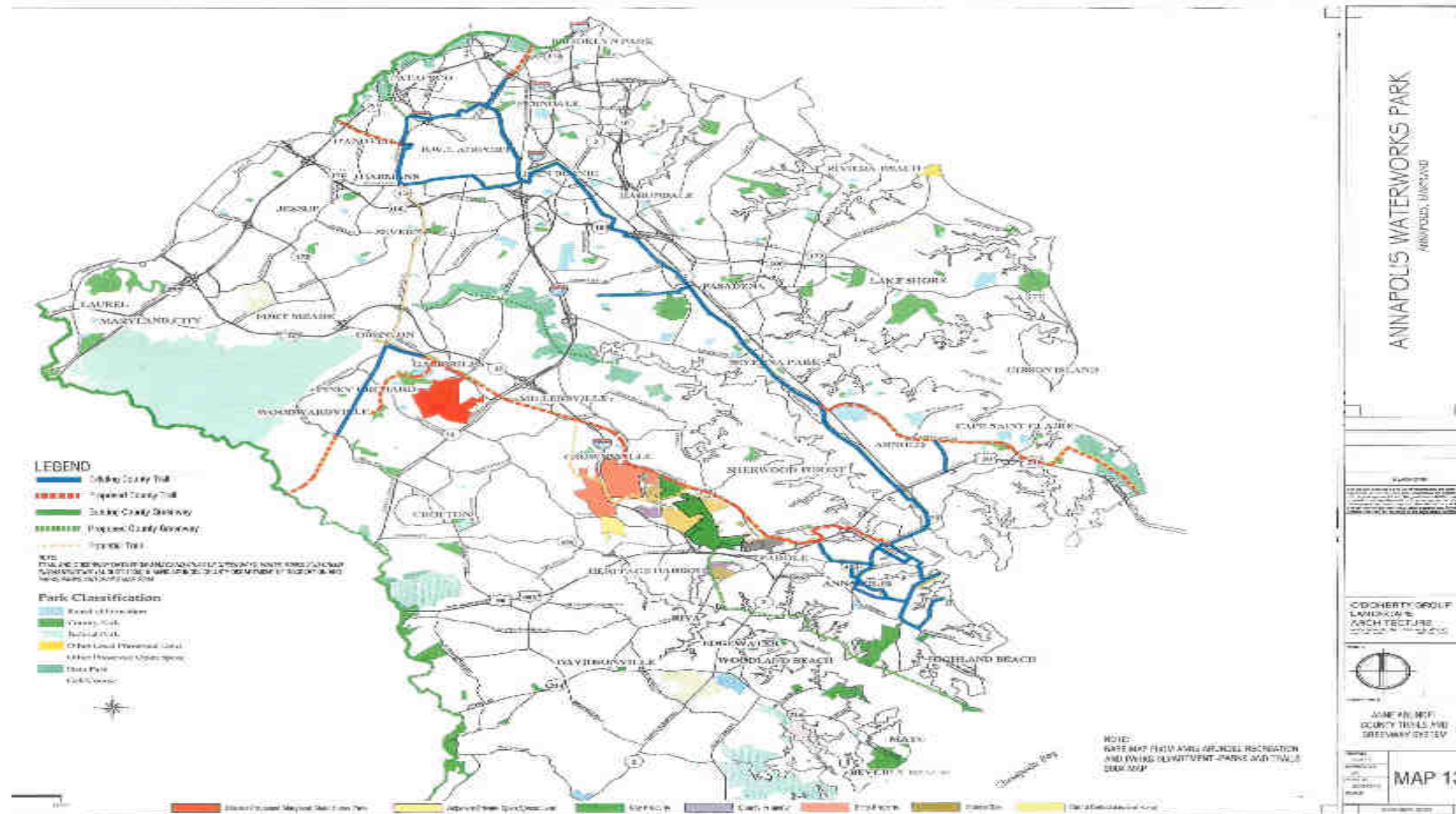
Trail Riding is the art and sport of riding any breed horse, any style across the land. It is important for trail riders to know which areas are safe and passable. These equestrians will utilize the site offerings indicated in the section entitled Horse Trails and the Future.

The Maryland Horse Park will feature miles of trails through forest buffers and meadows, along pastures and over lakes, and will have a perimeter connecting to the East Coast Greenway. The same railroad that carried coal to the dairy's pasteurizers and delivered milk every morning to Annapolis left a path that will one day be the South Shore Trail. Parts of this right-of-way have been converted to hiker/biker trails connecting West County neighborhoods, with another segment scheduled to be added in 2007. The entire system, when completed, will provide bicycle access from throughout Anne Arundel County to the Maryland Horse Park and the City of Annapolis. A series of equestrian trails on the City's Waterworks Park property (just a few miles from the Horse Park

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along the South Shore line) is planned. Trail riding through a beech forest will be permitted in a preserve virtually untouched by time. When the City's master plan is



implemented, this beautiful wilderness will feature hiking, fishing, bicycling and a dog park.

Vaulting

Perhaps vaulting's most prominent recognition as a form of equestrian sport in more recent times was its inclusion (as "Artistic Riding" by cavalry officers) in the 1920 Olympic Games. Some trace the origins of vaulting to Roman games, including acrobatic displays on cantering horses. Others see roots in the bull dancers of ancient Crete. In either case, people have been performing acrobatic and dance-like movements on the backs of moving horses for more than 2,000 years. Vaulting is a unique and growing sport that combines gymnastics and dance on a moving horse. It's a wonderful way to develop coordination, balance, strength, and creativity while working in harmony with an equine partner. Vaulting teams from the Gambrills area have competed successfully at the National level. The indoor and outdoor riding areas for can be used for practicing these events.

Western (Cutting, Halter, Horsemanship, Pleasure, Reining, Showmanship, Team Penning, Trail)

Western riding evolved stylistically from traditions brought to the Americas by the Spanish, and its skills recall the needs of the working cowboy. The difference comes from the cowboy's need to rope cattle with a lariat (or lasso). The cowboy must control the horse with one hand and use the lariat with the other. That means horses must learn to neck rein, i.e., respond to light pressure of the slack rein against the horse's neck. Working with half-wild cattle, frequently in terrain where visibility is limited, presents danger of an accident, miles from home. These multiple tasks require different tack, including a special kind of saddle which includes a prominent pommel surmounted by a horn. This is a list of typical western classes which will use indoor and outdoor riding areas at the Park:

Halter class – here the horse is shown with only a halter and without a rider, but with a handler controlling the horse from the ground using a leadrope. The horse is taken through a short pattern where the horse and handler must demonstrate control during walk, jog and turns. In regular halter class, judges will put emphasis on the performance and build of the horse when awarding points, in ‘showmanship at halter’ the performance of the handler and horse are both judged equally. Halter class is particularly popular with young riders who do not yet have the skill or confidence to participate in other forms.

Trail class – in this event, the rider has to maneuver the horse through an obstacle course in a ring. Speed is not important, but total control of the horse is. Horses have to move sideways, make 90 degree turns while moving backwards. Riders have to open and/or close a fence while mounted, and perform other maneuvers relevant to everyday ranch or trail riding tasks.

Team penning – a popular timed event in which a team of 3 riders must select 3 to 5 marked steers out of a herd and drive them into a small pen. The challenge is that the riders cannot close the gate to the pen until all cattle (and only the intended cattle) are inside.

Cutting – an event which, more than any other, highlights the “cow sense” prized in stock breeds such as the quarterhorse. The horse and rider select and separate a calf from a small group. When calf tries to return to its herd, the rider loosens the reins and leaves it entirely to the horse to keep the calf separated. The best horses perform this job with relish, savvy, and style. A jury awards points to the cutter.

Reining – this requires horse and rider to perform a precise pattern consisting of canter circles, rapid “spins” (a particularly athletic turn on the haunches), and the sliding stop (executed from a full gallop).

Western pleasure – the rider must show the horse in walk, jog (a slow, controlled trot), trot and lope (a slow, controlled canter). The horse must remain under control, with the rider directing minimal force through the reins and otherwise using minimal interference.

Youth Programs (4-H, 4-H Horse, FFA, Boy / Girl Scouts, Pony Club, and Other Youth Groups)

Maryland youth will be the primary beneficiaries from the creation of the Maryland Horse Park. In addition to the continuation of the Anne Arundel County 4-H Dairy Leasing Program on the site, the Maryland 4-H horse program will offer its more than 1,500 members the opportunity to increase their educational experiences through the Park. The educational center on the north end of the property will offer 4-Hers the opportunity to learn about animal care, animal judging, and animal husbandry regardless of whether they have animals of their own. Other groups such as the Scouts or the Maryland Pony Club will be able to utilize the entire park to appreciate the rural, agrarian economy related to horses. Horse sports and 4-H teach children dedication, responsibility and hard work, and they learn to accept disappointment.

Bio-Security

In order to reduce the incidence of animal health related emergencies, a number of better management practices (BMP's) will be implemented at the Maryland Horse Park. These BMP's will be developed to not only educate the public, but also to educate the horse industry on methods to reduce the incidence of infectious disease. Measures will include:



The Maryland Horse Park will partner with the Maryland Department of Agriculture (MDA) to leverage available grant funding of lab diagnostic equipment. The lab will be able to be utilized by the MDA Animal Health Program as well as the Virginia-Maryland Regional College of Veterinary Medicine, and most importantly, privately practicing veterinarians.

All animals entering the Maryland Horse Park will be required to show proof of Coggins testing, current health certificates, and routine vaccination certificates. This information will be collected at the horseman's entrance.

The initial design will allow for isolation barns separate from the rest of the facility in case of health emergencies.

Design elements will isolate the small permanent resident animal population from transient animal populations.

Foot baths, hand washing stations, and educational materials will be available and highlighted with appropriate signage in all animal areas where the public has contact with the animals.

These steps will enable the Maryland Horse Park to not only reduce the incidence of infectious disease, but also create a broader impact by educating the public. These steps would have a tremendous positive impact on the State's animal industries and could reduce future outbreaks of viruses such as Equine Herpes, West Nile, or Strangles, all of which have been devastating to the State's economy in recent years.

Conclusion

The Maryland Horse Park is more than an exciting use of a single property; it will be a catalyst for land conservation. The Horse Park will provide the opportunity to save local farms by providing a market for goods and services. It will anchor a network of open space assignments managed by federal, state, county, and local governments and form the nucleus of recreational facilities for a rapidly growing populace and work force.

The Maryland Horse Park will encourage community involvement, promote recreational opportunity, demonstrate environmental sensitivity, provide educational programs, and express appreciation of Maryland's equine history. It will promote economic development and advancement of the horse industry. The Maryland Horse Park will be a publicly-owned complex dedicated to serving equestrian enthusiasts and educating the public to the vast vistas of Maryland's equine industry.

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VIII. USNA Dairy Farm

VIII. U.S. NAVY

The 875 acre property known as the USNA Dairy Farm has been owned by the U.S. Navy for approximately 100 years. It was originally purchased in order to secure a safe supply of dairy products for the Naval Academy midshipmen after an outbreak of Typhoid Fever at the Naval Academy in the early 1900's. It continued to be used as a USNA Dairy Farm until the 1990's.

In 1998 the Federal Law governing the use of the property was changed. The new law is attached for reference, however the most relevant clause is stated below:

1. The real property containing the dairy farm (consisting of approximately 875 acres)
 - (A) may not be declared to be excess real property to the needs of the Navy or transferred or otherwise disposed of by the Navy or any Federal agency; and
 - (B) shall be maintained in its rural and agricultural nature.
- b. LEASE AUTHORITY – (1) Subject to paragraph (2), to the extent that the termination or reduction of operations at the Naval Academy dairy farm permit, the Secretary of the Navy may lease the real property containing the dairy farm, and any improvements and personal property thereon, to such persons under such terms as the Secretary considers appropriate. In leasing any of the property, the Secretary may give a preference to person who will continue dairy operations on the property.

The Maryland Department of Agriculture and the Horse Industry Board have determined that a Horse Park operation is an agricultural use. Horses are defined as agricultural livestock under Maryland statute and the Maryland Horse Park would be fully licensable as an agricultural business under Maryland State law. In urbanizing areas where rising land values and low commodity prices are squeezing agricultural enterprises, horse operations have emerged as a significant part of the working landscape. In addition to maintaining the rural environment of the former Naval Dairy Farm, the Maryland Horse Park will be a valuable economic engine for Maryland's agricultural industries, of which the Maryland horse industry is one of the top ten commodities by all measurements. In addition, the Dairy Farm operation will be continued at the Horse Park, therefore fully complying with the intent of the law.

Currently, the U. S. Navy has a short term lease with an organic farmer. Late last year the U. S. Navy issued a Request for Information (RFI) for interested parties to respond with their ideas on using the farm on a long term basis. The Maryland Stadium Authority responded to the RFI. The U. S. Navy is currently considering its next steps which could include a formal Request for Proposal. The Maryland Stadium Authority intends to submit the Horse Park proposal, contingent on funding legislation, if the Navy enters into the next round of the process.

(a) Discretion Regarding Continued Operation.—

(1) Subject to paragraph (2), the Secretary of the Navy may terminate or reduce the dairy or other operations conducted at the Naval Academy dairy farm located in Gambrills, Maryland.

(2) Notwithstanding the termination or reduction of operations at the Naval Academy dairy farm under paragraph (1), the real property containing the dairy farm (consisting of approximately 875 acres)—

(A) may not be declared to be excess real property to the needs of the Navy or transferred or otherwise disposed of by the Navy or any Federal agency; and

(B) shall be maintained in its rural and agricultural nature.

(b) Lease Authority.—

(1) Subject to paragraph (2), to the extent that the termination or reduction of operations at the Naval Academy dairy farm permit, the Secretary of the Navy may lease the real property containing the dairy farm, and any improvements and personal property thereon, to such persons and under such terms as the Secretary considers appropriate. In leasing any of the property, the Secretary may give a preference to persons who will continue dairy operations on the property.

(2) Any lease of property at the Naval Academy dairy farm shall be subject to a condition that the lessee maintain the rural and agricultural nature of the leased property.

(c) Lease Proceeds.— All money received from a lease entered into under subsection (b) shall be retained by the Superintendent of the Naval Academy and shall be available to cover expenses related to the property described in subsection (a), including reimbursing nonappropriated fund instrumentalities of the Naval Academy.

(d) Effect of Other Laws.— Nothing in section [6971](#) of this title shall be construed to require the Secretary of the Navy or the Superintendent of the Naval Academy to operate a dairy farm for the Naval Academy in Gambrills, Maryland, or any other location.

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IX. Economic Impact

IX. Economic Impact

The Maryland Stadium Authority commissioned the economic study with KPMG,LLP to determine the expected facility usage and economic return to the State and County.

Horse park projects of this nature have recently been highlighted in national publications as a method to attract new tourist revenue from out of state visitors and at the same time protect valuable green space. They are the convention centers of tomorrow without the massive structure.

Attached to this section of the Maryland Horse Park and Agricultural Education Center report is the Executive Summary of the economic study. The full report is included in Appendix B.



Executive Summary

KPMG was retained by the MSA to assist it in developing a model to estimate the economic and fiscal impacts that may accrue to Anne Arundel County and the State of Maryland from operations of the proposed horse park. Specific research tasks conducted in this analysis include, but were not limited to, the following:

- Met with representatives of the MSA, Mhib and other advisors to review market data and other key information used to develop their utilization and financial assumptions for the proposed horse park
- Reviewed previous studies associated with the equine industry in Maryland and nationally
- Summarized other equestrian facilities in the State to obtain an understanding of the potential incremental event activity
- Summarized building program, event activity and financial operations for a select number of horse parks
- Assisted the MSA in developing a survey to obtain information related to event activity, financial characteristics and programming needs for sponsoring organizations as well as the lodging needs and spending patterns for attendees at events and how these may or may not vary by geographic location and analyzing survey results
- Provided input on the various building program components based on comparable horse parks and survey responses
- Estimated the potential economic and fiscal impacts in terms of direct spending, total output, personal earnings and employment associated with the proposed horse park in Anne Arundel County based on event activity and financial operating assumptions provided by the MSA and its advisors.

Municipalities and states throughout the U.S. have recognized the economic benefits of operating various public assembly facilities for sports, entertainment and meeting/convention business. Numerous stadiums, arenas and convention centers have been developed with the use of public funds due, in part, to the ability of these venues to generate economic activity at area businesses and tax revenues for the local and State entities. According to industry publications, recent trends in venue development have included funding for \$400 million of equestrian center projects and another nine are in the design concept stage in the U.S. *Venues Today* reports that municipalities are developing these facilities due to a growing market and their desire to boost economic impact by attracting an affluent market segment associated with horse ownership, training and competitions. Spending on items such as farriers, feed, bedding and veterinarians can add up to significant direct spending associated with such venues.

Other industry sources, including the United States Equestrian Federation, Inc. (USEF) have openly supported development of a Maryland horse park due to the steady growth in participation at competitions in recent years and an increasing occurrence of date conflicts at existing venues. According to USEF representatives, the selected site in Annapolis is likely to attract nationally and internationally recognized competitions due to its proximity to a large



population center and its established reputation as a tourist destination. Further, USEF representatives also mention that the proximity to a large spectator base in Annapolis is likely to attract corporate sponsorships and other private investment in the proposed park.

One such event that was recently awarded to a U.S. horse park for the first time is the 2010 Federation Equestre Internationale (FEI) World Equestrian Games. This event is comprised of the world championships for seven equestrian sports and is held every four years. Developing a facility with world-class amenities close to an international airport and other supporting visitor services will be critical in terms of the ability of the proposed park to potentially host similar events. Attracting such events and out-of-town participants and spectators will have a direct impact on the level of economic and tax benefits that could potentially be generated by the proposed horse park.

The proposed concept for the Maryland horse park is distinct from that offered by existing equine facilities in the State such as the Prince Georges Equestrian Center, Fair Hill or the State Fairgrounds. The proposed park is anticipated to be an equine attraction similar to the Kentucky Horse Park drawing visitors from both within and outside of the State. Consequently, while there may be some minor shift of events currently hosted in existing venues, according to the market survey conducted by the MSA and its advisors, the majority of activity is anticipated to be incremental new business to the State. In addition, the MHIB indicates that many events cannot currently be accommodated by existing facilities in the State of Maryland. These events are assumed to be held at the proposed horse park, negating some of the impacts related to a transfer of event activity from existing State venues.

While this section presents a summary of the research conducted, this information is extracted from a more detailed analysis of various data related to the proposed project. It is important for the reader to review the report in its entirety in order to gain a better understanding of the methodology and the assumptions used.

Utilization

Based on the preliminary building program elements provided by the MSA and results of the horse industry survey, the proposed park is estimated to accommodate a variety of event types including: dressage, hunter/jumper shows, steeplechasing, three-day eventing, western events, pony clubs and rodeos. In addition, other equine events such as jousting, riding education, therapeutic riding, auctions and trail-rides are anticipated uses of the proposed horse park. Non-equine events include dog shows, meetings and social events, among others. The following table presents the estimated event activity prepared by the MSA and its advisors which is based on the market survey results and comparable park event activity.



Estimated Utilization Category	Proposed MD Horse Park	
	Number	% Total
Event Days		
Equine	223	68%
Non-Equine	105	32%
Total	328	100%
Attendee Days		
Equine	479,600	60%
Non-Equine		
Special Events	120,750	15%
Visitors Center/Museum	170,000	21%
Campgrounds	27,000	3%
Total	797,350	100%

Source: MSA/MHIB

Financial Operations

Based on several assumptions including the proposed building program, estimated utilization for the proposed horse park as well as information from comparable horse park operations, the MSA and its advisors estimate that the proposed horse park will operate at break-even financially during a stabilized year of operations. While financial data from other horse parks was considered by the MSA and its advisors, more weight was placed on the operations of the Kentucky Horse Park due to its anticipated similarity in building program elements and estimated utilization. In addition, unique characteristics of the proposed new horse park, the proposed location in populated Central Maryland which is already a popular tourist destination and the existing marketing resources in Annapolis/Anne Arundel County were also considered. The financial operations include the use of the facility by Fasig-Tipton Company, Inc. (Fasig-Tipton), a leading equine auction company in the U.S. for over 100 years. The company currently holds five auctions each year at the Maryland State Fairgrounds. According to company representatives, total sales at the Maryland auctions for 2005 will likely approach \$50 million. However, representatives also indicate that the company is actively seeking alternative venues outside Maryland due to the inability of the existing venue to accommodate the significant growth its auctions have experienced in recent years. Based on the company's historical sales and conversations with representatives, the proposed horse park is assumed to generate \$500,000 in rental revenue from Fasig-Tipton. Total operating revenue in a stabilized year is estimated at approximately \$6.6 million as calculated utilizing 2005 dollars and, as indicated previously, the proposed horse park is estimated to operate at break-even. This estimate excludes depreciation expense.

This estimate is based on certain hypothetical assumptions pertaining to operations of the facility, attendance levels and other related financial assumptions prepared by the MSA and its advisors. As this analysis represents an estimate based on assumptions, it is subject to change depending on the actual building program, event calendar, contractual agreements with service providers, and further refinements regarding operating strategies for the facility.





Economic & Fiscal Benefits

As mentioned previously, the primary goals of the proposed horse park are to enhance the State of Maryland's tourism appeal as well as its rich history and tradition in the horse industry; promote business activities related to the horse industry; and encourage maintenance of open space. Anne Arundel County and the State of Maryland would benefit from operations of the proposed horse park in a number of ways, including such tangible and intangible benefits as:

- Enhancing the area's image as an entertainment destination by increasing its offering of visitor amenities;
- Receiving increased State, regional and national exposure given the populated location of the proposed horse park, the estimated event activity and anticipated sponsorship opportunities;
- Increasing the overall quality of life in the area by offering additional park and recreational space and tying into existing trail systems;
- Creating an attractive venue to host special events which are currently held outside the County (e.g. Anne Arundel County high school graduations); and
- Preserving open space;
- Promoting agriculture and equine related businesses;
- Generating additional economic activity in the area; and
- Generating fiscal revenues for local and State governments.

Each of these benefits is important in assessing the impacts that the proposed horse park may have on the Anne Arundel County area as well as the State of Maryland as a whole. Qualitative benefits such as those listed above are supported by industry representatives who indicated that the development of additional horse parks in a particular region can create synergies in terms of market demand, media attention and sponsorship opportunities as the overall region gains a reputation for being a hub of equine activity.

While the value of most of these benefits is difficult to measure, the economic activity generated in the region can be quantified. This analysis quantifies the direct and induced/indirect benefits associated with the proposed horse park at the local level as well as the associated tax revenues.

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The summary of estimated economic and fiscal benefits from the proposed horse park is presented in the following tables.

Estimated Annual Economic Benefits	<i>Anne Arundel County</i>	<i>State of Maryland</i>
Spending		
Direct Spending	\$66,649,000	\$70,450,000
Induced/Indirect Spending	\$37,673,000	\$52,058,000
Total Spending	\$104,322,000	\$122,508,000
Total Earnings	\$41,089,000	\$47,482,000
Total Employment (number of FTEs jobs)	1,570	1,900

Note: State amounts include local amounts.

Estimated Annual Fiscal Benefits	<i>City of Annapolis</i>	<i>Anne Arundel County</i>	<i>State of Maryland</i>	Total Fiscal Impacts
Admissions and Amusements Tax				
Inside the Horse Park	n/a	\$56,000	\$222,000	\$278,000
Outside the Horse Park	\$12,000	\$104,000	n/a	\$116,000
Hotel/Motel Tax	\$167,000	\$1,502,000	n/a	\$1,669,000
Personal Income Tax	n/a	\$631,000	\$1,353,000	\$1,984,000
Sales and Use Tax	n/a	n/a	\$5,052,000	\$5,052,000
Corporate Income Tax	n/a	n/a	\$245,000	\$245,000
GRAND TOTAL	\$179,000	\$2,293,000	\$6,872,000	\$9,344,000

Note: n/a denotes not applicable.

As shown, annual State and local taxes generated by the proposed horse park's operations are estimated to total approximately \$9.3 million.

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X. Project Cost and Funding

X. Project Cost and Funding

The estimated cost to construct the Maryland Horse Park is \$114,165,202, and are broken down at the end of this section.

The project cost is proposed to be funded by a combination of Maryland Stadium Authority 30-year lease- backed bonds and local and private contributions. The private contributions are proposed to include up-front payments and/or payments for equipment and furnishings by concessionaires and other on-site service providers. The local contributions would be negotiated with local jurisdictions, and would be in an amount which local jurisdictions and the Maryland Stadium Authority determine is fair and reasonable after taking into account all of the costs and benefits of the project. Agreements with the local jurisdictions and a long term lease with the Navy would be a condition precedent to the issuance of the Maryland Stadium Authority bonds.

The source of funds for the payment of the bonds would mirror the funding source for the Maryland Stadium Authority's Baltimore Convention Center, Ocean City Convention Center, Montgomery County Conference Center and Hippodrome Performing Arts Center bonds; i.e., the taxes generated by the project which are payable to the State. These funds consist of personal income tax, sales and use tax and corporate income tax, all of which are paid into the State's general fund. Accordingly, the funds are not pledged to the bondholders. Instead, the State agrees to make a "rent" payment to the Maryland Stadium Authority equal to the debt service on the bonds. In order to begin payments when the project is complete and revenues are flowing to the State, interest would be capitalized during the construction period. Thus no payments would be made until after construction is complete.

Based upon the KPMG Economic Impact Analysis, projected tax revenues generated to the State by the Maryland Horse Park will be \$6.872 million per year in a stabilized year. At an assumed 5% tax-exempt interest rate for Maryland Stadium Authority bonds, annual debt service on an assumed \$100 million in bonds would be \$6.5 million per year. If these assumptions are correct, the taxes generated by the project and paid to the State would be sufficient to pay in full \$100 million in debt and result in an annual surplus to the State of \$372,000.

Annual tax revenues generated to the County are projected to be an additional \$2.3 million, which could be used to support a county investment in the project. The annual tax revenues payable to the City of Annapolis are projected to be \$123,000. Total annual tax revenues are projected to exceed \$9.3 million.

The KPMG Study also projects admissions taxes, payable to the Maryland Stadium Authority, in the amount of \$222,000. It is proposed that admissions taxes would be held by the Maryland Stadium Authority as a capital improvements reserve. On the operational side, the Park is expected to break even.

The Maryland Stadium Authority would also propose that as an adjunct to the Horse Park the Maryland Horse Industry Board grant program be expanded to help fund other equestrian venues throughout the State, and further enhance the agricultural and equine business base in Maryland.

According to the August 2005 issue of "Venues Today" magazine, nearly \$400 million in equestrian facilities are currently under construction around the country, and nine more are in the planning stage. The driving force behind these projects is the desire to boost economic impact by attracting to the state an affluent market segment.

The formula for success is that the new tax dollars generated by the economic activity spurred by the Horse Park is projected to exceed the cost of the facility.

Project Cost Breakdown



PROJECT: Maryland Horse Park
Gambrells, Maryland

PROJECT NO: 05378-01
 BID PACK: General
 DATE: 12/2/05
 PHASE: Concept
 REVISION: 3/6/05
 ANALYST: Ridgely

COMPONENT ESTIMATE SUMMARY

694,255 S.F. AIA AREA

KEY	DESCRIPTION	SF AREA	CURRENT ESTIMATE	PER S.F.	\$ %
A	A. Visitors Center & Administration	14,170	\$ 2,567,010	\$ 181.18	2.6%
B	B. Equestrian/Agriculture Museum	26,809	\$ 5,183,650	\$ 193.36	5.3%
C	C. Main Indoor Equestrian Show Ring	201,148	\$ 24,511,079	\$ 121.88	25.0%
D	D. Indoor Warm-Up Ring	33,600	\$ 2,856,000	\$ 85.00	2.9%
E	E. Main Outdoor Equine Show Ring	18,457	\$ 5,186,440	\$ 281.01	5.3%
F	F. Equestrian User Storage Building	2,760	\$ 124,200	\$ 45.00	0.1%
G	G. Small Horse Barns (5-600 stalls)	180,335	\$ 9,706,250	\$ 48.28	8.9%
H	H. Large Horse Barns (2-240 stalls)	84,262	\$ 4,279,300	\$ 50.79	4.4%
I	I. Stable Area Retail & Vendor Buildings	4,233	\$ 236,375	\$ 55.84	0.2%
J	J. Central Plant	9,000	\$ 4,950,000	\$ 550.00	5.1%
K	K. Outdoor Show Rings (Sf of structures only)	9,140	\$ 4,341,700	\$ 475.02	4.4%
L	L. Equestrian Zone Carriage Station	920	\$ 69,000	\$ 75.00	0.1%
M	M. Steeplechase Course (SF of structures only)	12,813	\$ 3,720,930	\$ 290.41	3.8%
N	N. Support/Maintenance Buildings	21,228	\$ 355,530	\$ 16.75	0.4%
O	O. Historic Zone	84,785	\$ 6,177,207	\$ 95.35	6.3%
P	P. Site Improvements		\$ 22,528,420	\$ 32.45	23.0%
Q	Q. R.V. Park	4,588	\$ 1,416,670	\$ 308.78	1.4%
R	R. Trailhead	6,009	\$ 708,200	\$ 117.86	0.7%
S					
T					
U					
V					
W					
X					
Y					
Z					
AA					
	Sub-total:	694,255	\$ 97,917,961	\$ 141.04	
7.50%	Design Contingency		\$ 7,343,647	\$ 10.58	
	Construction Contingency (by owner)		\$ -	\$ -	
8.46%	Escalation to Midpoint of Const 4/08		\$ 8,903,395	\$ 12.82	
	Total Construction Cost w/ Contingencies		\$ 114,165,202	\$ 164.44	

Assumptions and qualifications regarding this cost are detailed in the full estimate, attached as Exhibit F.



May, 2006

Feasibility Study
Maryland Horse Park
and
Agricultural Education Center

XI Traffic

XI Traffic

The Maryland Stadium Authority commissioned the traffic study with Rummel Klepper & Kahl, LLP at this very early portion of the study in order to provide more information to the community. The message heard in the community meetings is that the current traffic problems and the impact of the Horse Park traffic are the community's number one concern.

This study is preliminary and mitigates the expected traffic patterns for a Horse Park. If the project proceeds, the Maryland Stadium Authority will work closely with the State Highway Administration and the community to expand upon these recommendations. We also intend to pursue the congested Route 3 situation as a priority with the State Highway Administration and the County.

The initial estimates for the current recommended traffic improvements are approximately \$1.5 million.**

Attached is a summary of the improvements recommended in the traffic study. The entire study is attached in the Appendix.

**Traffic improvement costs are not included in the total Project Cost.

May, 2006

Feasibility Study
Maryland Horse Park
and
Agricultural Education Center



Mr. Gary McGuigan, Project Executive
Maryland Stadium Authority
The Warehouse at Camden Yards
333 West Camden Street
Baltimore, Maryland 21201

RE: Anne Arundel County
MD175
Maryland Horse Park

Dear Mr. McGuigan:

Thank you for the opportunity to continue discussions on the Traffic Impact Study (TIS) and the feasibility study for the proposed Maryland Horse Park in Anne Arundel County. This is a follow up to our discussion concerning the status of the feasibility study and the future project efforts concerning the State Highway Administration (SHA) TIS response letter, dated March 17, 2006.

The SHA understands that the Maryland Stadium Authority (MSA) feasibility study phase of the project is nearly complete. The SHA also understands that the MSA will address the TIS comments during the next project phase. The SHA looks forward to continuing with the level of past cooperation between our agencies in the discussion and resolution process on project details and traffic elements. SHA is confident that we will collectively arrive at more detailed engineering solutions for acceptable roadway improvements.

The SHA anticipates hearing from you when the next phase of the project begins. If you have any questions, please contact me or Mr. Rich Zeller at 410-545-5598 or by email at rzeller@sha.state.md.us.

Very truly yours,

Steven D. Foster, Chief
Engineering Access Permits Division

SDF

cc: Mr. Joe Finkle, SHA, Travel Demand Forecasting Section
Mr. Robert French, SHA, Office of Traffic and Safety
Mr. Jim Holls, Whitney, Bailey, Cox and Magnani, LLC
Mr. Eric Tabacek, SHA, Traffic Development & Support Division
Ms. Kimberly Tran, SHA, District 5 Traffic
Mr. Rich Zeller, SHA, Engineering Access Permits Division

My telephone number/toll-free number is _____
Maryland Relay Service for Impaired Hearing or Speech: 1.800.735.2258 Statewide Toll Free
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202 • Phone: 410.545.0300 • www.marylandroads.com

Proposed Site Traffic Study Summary

The Maryland Horse Park will be an 800 acre facility located west of MD 3 and south of MD 175 on the former USNA Dairy Farm site in Gambrills, Maryland. The Horse Park will be operated by the Maryland Stadium Authority (MSA) and is expected to attract national and international non-racing competitions, including show jumping, eventing, dressage, endurance riding, and steeplechase. The park will also include other equestrian activities such as breed demonstrations, trail riding, jousting, rodeo and 4H activities. The Park site is proposed to include Indoor and Outdoor Show Rings, a Grand Prix Field, a Steeplechase Grandstand, 1,000 horse stalls, a sales pavilion, cross country courses, a campground, educational/meeting facilities, and a museum. Complete build-out of the development is expected to occur by Spring 2009. The primary public access to the site is a proposed entrance along MD 175 to be located approximately 1,200 feet west of MD 3.

The purpose of this Initial Traffic Impact study is to evaluate the potential traffic impacts the proposed Maryland Horse Park may have on the adjacent roadway network, focusing on MD 3 (Robert Crain Highway) and MD 175 (Annapolis Road). This is an initial study as opposed to the final due to the possible expansion of the limits of the adjacent study area network to be studied if a secondary entrance is considered along Dairy Farm Road, south of MD 175.

The significant findings of this initial traffic impact study for the proposed Maryland Horse Park are as follows:

- Under existing conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections operate below Anne Arundel County's worst-acceptable Level of Service (LOS D) during both the AM and PM peak hours on weekdays

- The intersections along MD 175 operate at an acceptable LOS during both the AM and PM peak hours on weekdays
- All of the study intersections operate at an acceptable LOS during the peak hour on Saturdays.
- Under total background traffic conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable LOS during both the AM and PM peak hours on weekdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection would also operate at an unacceptable LOS during the AM peak hour on weekdays
 - The intersections along MD 175 would continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays
 - All of the study intersections would continue to operate at an acceptable LOS during the peak hour on Saturdays. However, the LOS would decrease from B to C for the MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections.
- Under total build-out conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable Level of Service (LOS D) during both the AM and PM peak hours on weekdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection would also operate at an unacceptable LOS during the AM peak hour on weekdays
 - The intersections along MD 175 would continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays
 - The LOS at MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road would decrease from C to D on event Saturdays
 - The two unsignalized MD 175 intersections would continue to operate at an acceptable LOS during the peak hour on event Saturdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection will operate at an acceptable LOS on event Saturdays

- The MD 175 @ Maryland Horse Park Access Road intersection would operate at an acceptable LOS during the AM and PM peak hours on weekdays, but would operate at an unacceptable LOS (LOS E) during the peak hour on event Saturdays.
- The MD 3 @ Waugh Chapel Road intersection operates at LOS F on weekdays under existing conditions. The Maryland State Highway Administration (SHA) has been investigating the possibility of constructing an interchange at this location as a long-term improvement. If approved, the interchange would alleviate the existing congestion at this intersection.
- The MD 3 Southbound @ MD 175 intersection is a very congested (LOS E) intersection during the AM and PM peak hours on weekdays under existing conditions. SHA has an active planning project to provide three (3) through lanes along MD 3 southbound at this intersection. This additional capacity would significantly improve the LOS at this intersection.

The facilities and events contained within the Maryland Horse Park's Program Summary would create negligible traffic impacts on the intersections within the study area during weekdays. During event Saturdays, the Maryland Horse Park traffic could be accommodated without causing significant adverse impacts to the adjacent roadway network (MD 175 and MD 3) if the mitigation concepts described below are implemented.

Based on the data and analyses contained within this report, RK&K presents the following potential traffic impact mitigation concepts.

1. Provide widening along westbound MD 175 between the signal at southbound MD 3 and proposed Maryland Horse Park entrance to provide two lanes in the westbound direction, with the left lane becoming a left-turn only lane approaching the park entrance and the right lane continuing beyond the entrance for through

traffic on MD 175. (*Note: Any existing shoulders that are removed due to roadway widening will be replaced along the affected roadway segments*).

2. At the intersection of MD 175 and the proposed Maryland Horse Park entrance, provide a deceleration lane (350 ft.) approaching the site access and an acceleration lane (500 ft.) for right turns exiting the site. Provide separate left turn (100 ft.) and right turn lanes along the access road for traffic leaving the site. These additions would improve the level of service at the MD 175 / Site Access intersection from LOS E to LOS B during the peak hour on event Saturdays. *The CLV analysis worksheet showing this improvement is provided in Appendix H.*
3. At the intersection of MD 3 southbound and MD 175, provide a 425-foot right turn bay along eastbound MD 175 to accommodate the increased right turn volume. This improvement is based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method. This modification does not improve the level of service at the southbound MD 3 at MD 175 intersection from LOS D since the effect of this geometric improvement cannot be evaluated using the CLV method. The Synchro/SimTraffic analysis confirms that the delay experienced by the eastbound right turns in the total build-out condition remains the same as in the total background condition even if a 425 ft. right turn bay is provided. The delay will be significantly higher if the right turn bay is not provided.
4. Extend the southbound right turn lane at MD 3 southbound and MD 175 intersection by 180 feet to provide a 425 feet long turn bay. This improvement is based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method.
5. Modify the lane use within the crossover between the MD 3 southbound and northbound lanes to provide double left turn lanes in the eastbound direction with

250 feet of storage. Currently, there are two westbound through lanes and one eastbound through lane in the crossover that extend for the entire distance between northbound and southbound MD 3, with separate single left turn lanes onto northbound and southbound MD 3. This option would convert 250 feet of the left westbound lane to a second eastbound left turn lane, leaving only one remaining westbound receiving lane in the crossover. Since the westbound approach from Millersville Road has only one lane, and the left-turn lane from northbound MD 3 is a single lane, the resulting single westbound receiving lane within the crossover approach is acceptable. For 250 feet approaching the southbound MD 3 lanes, the second westbound through lane would open up to allow two lanes of traffic to cross MD 3. The Proposed Lane Configuration is shown in Figure 15. These additions would improve the level of service at the MD 3 northbound/MD 175/Millersville Road intersection from LOS C to LOS B during the peak hour on event Saturdays.

6. Extend the northbound left turn lane at MD 3 northbound and Millersville Road intersection by 290 feet to provide a 500 feet long turn bay. This improvement is based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method.
7. In case of special events with unusually high attendance, alternate traffic mitigation measures such as point control officers for directing motorists and manually adjusting the signal timing at the MD 3 @ MD 175 intersections may be needed.
8. Provide guide signing along eastbound MD 32 located immediately prior to the MD 3/I-97 interchange, directing Horse Park traffic to use southbound MD 3.

The proposed improvements would be needed only along a short segment of MD 175 because signing and official Horse Park media (brochures, advertisements, etc.) would instruct all visitors to use MD 3 to access the park, resulting in minimal Horse Park related traffic along MD 175 west of the park entrance. This would significantly minimize the traffic impacts on the surrounding neighborhoods and would concentrate the impact at one location. Without any widening in this one location, the guide signing and official Horse Park publications would need to direct some visitors to use additional roads such as Waugh Chapel Road, Dairy Farm Road and Burns Crossing Road to reach the park entrance on MD 175, which would spread the impact of Horse Park traffic across a larger area to the west and would have a more detrimental impact on the surrounding communities.

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I. Introduction

The Maryland Horse Park will be an 800 acre facility located west of MD 3 and south of MD 175 on the former USNA Dairy Farm site in Gambrills, Maryland. The Horse Park will be operated by the Maryland Stadium Authority and is expected to attract national and international non-racing competitions, including show jumping, eventing, dressage, endurance riding, and steeplechase. The park will also include other equestrian activities such as breed demonstrations, trail riding, jousting, rodeo and 4H activities. The Park site is proposed to include Indoor and Outdoor Show Rings, a Grand Prix Field, a Steeplechase Grandstand, 1,000 horse stalls, a sales pavilion, cross country courses, a campground, educational/meeting facilities, and a museum. Complete build-out of the development is expected to occur by Spring 2009. The location of the site is shown in Figure 1 and a Site Development Plan is provided following Figure 1.

The purpose of this Initial Traffic Impact study is to evaluate the potential traffic impacts the proposed Maryland Horse Park may have on the adjacent roadway network, focusing on MD 3 (Robert Crain Highway) and MD 175 (Annapolis Road). This study also provides roadway improvement options to mitigate any adverse impact.

II. Existing Traffic Conditions

• Study Intersections

The primary public access to the site is a proposed entrance along MD 175 to be located approximately 1,200 feet west of MD 3. Hence, the site will have direct access to an arterial roadway. No direct access to the site will be provided from either MD 3 or Waugh Chapel Road. The Anne Arundel County Guidelines for Traffic Impact Studies state that intervening intersections up to the second arterial should be analyzed. Therefore, traffic operations at the following five (5) intersections were evaluated for this study:

- MD 3 Southbound Lanes at MD 175



- MD 3 Northbound Lanes at Millersville Road/MD 175
- MD 3 at Waugh Chapel Road
- MD 175 at Gambrills Road
- MD 175 at Burns Crossing Road

These intersection locations are identified in Figure 1. The MD 3 intersections are signalized while the MD 175/Gambrills Road and the MD 175/Burns Crossing Road intersections are unsignalized two-way stop controlled intersections. Lane use along the approaches at each of the study intersections and the existing storage bay lengths for left turn and right turn movements are provided in Figure 2.

Two additional intersections – MD 175 at Dairy Farm Road and Waugh Chapel Road at Dairy Farm Road – could be impacted if a secondary site entrance is provided along Dairy Farm Road. Those impacts would be evaluated at a future date prior to the opening of a secondary access point to determine if additional roadway improvements would be necessary. Under the initial phase of development for the Horse Park, a single access point on MD 175 would be provided, which would have a negligible impact on the MD 175 at Dairy Farm Road intersection.

• **Traffic Volumes**

Given the recreational nature of the proposed development, both weekday and weekend existing traffic volumes were obtained. Thirteen-hour turning movement counts were conducted on Tuesday, October 25, 2005 from 6:00 AM to 7:00 PM at the MD 175/Gambrills Road and MD 175/Burns Crossing Road intersections. A February 22, 2005 13-hour count at MD 3 and Waugh Chapel Road intersection was obtained from the SHA Traffic Monitoring System (TMS). 13-hour counts at the MD 3 and MD 175/Millersville Road intersections were performed by RK&K on November 6, 2003 and were adjusted to 2005 levels using an annual growth rate 4% per year. The peak hour turning movement volumes used for analysis in this study are summarized in Figure 3

(weekday) and Figure 4 (Saturday). *The complete results from these turning movement counts are provided in Appendix A.*

• **Capacity Analyses**

Capacity analyses of the existing traffic conditions were performed using the weekday AM and PM peak hour traffic volumes shown in Figure 3 and Saturday volumes shown in Figure 4. The analyses were performed using the Critical Lane Volume (CLV) method. This method is typically applicable only to signalized intersections; therefore, it estimates the level of service (LOS) at which unsignalized intersections would operate if they were to be signalized. The results are summarized in Table 1.

Maryland Horse Park Initial TIS Maryland Stadium Authority					January 2006 RK&K Engineers, LLP	
Table 1 Summary of Analyses Results using the Critical Lane Volume Method Existing Traffic						
Intersection	Weekday				Saturday	
	AM Peak Hour		PM Peak Hour		Peak Hour	
	CLV	LOS	CLV	LOS	CLV	LOS
MD 3 Southbound @ MD 175	1,571	E	1,565	E	1,048	B
MD 3 Northbound @ Millersville Road/MD 175	1,317	D	1,150	C	882	A
MD 3 @ Waugh Chapel Road	1,851	F	1,750	F	1,087	B
MD 175 @ Gambrills Road	716	A	756	A	572	A
MD 175 @ Burns Crossing Road	554	A	578	A	428	A

As shown in Table 1, the MD 3 Southbound @ MD 175 and MD3 @ Waugh Chapel Road intersections currently operate below the worst-acceptable Level of Service (LOS D) during both the AM and PM peak periods on a weekday. The intersections along MD 175 operate at an acceptable LOS during both the AM and PM

peak periods on weekdays. All of the study area intersections operate at an acceptable LOS during the peak period on Saturdays.

The worksheets for all the existing capacity analyses (Critical Lane Method) are provided in Appendix B.

III. Total Background Traffic Conditions

- **Regional Growth**

The total background traffic used for these analyses is a combination of the regional growth and the traffic generated by the approved but unbuilt developments in the vicinity of the Maryland Horse Park site. Based on a review of the recent SHA estimates of the Average Annual Daily Traffic (AADT) volumes along MD 3 and MD 175 near the site, no consistent growth rate could be established. Hence, in accordance with the Anne Arundel County Guidelines for Traffic Impact Studies, a 4% annual growth rate was adopted as the regional growth rate. Since complete build-out of the Maryland Horse Park site is anticipated by 2009, the existing through traffic volumes shown in Figures 3 and 4 were increased by 4% per year for four (4) years. The 2009 Base Peak Hour Volumes for Weekdays and Saturdays are shown in Figures 5 and 6, respectively.

- **Background Developments**

As per direction from the Anne Arundel County Office of Planning and Zoning, the following were included as background developments for the subject study:

- I. Holladay Park (73 single family lots) located in the northwest quadrant of MD 3 and MD 175.
- II. Carroll's Creek (162 multifamily dwellings/housing for the elderly) located in the northwest quadrant of MD 3 and Waugh Chapel Road
- III. Edenbrook/Fireman's Land (224 retirement community units) located in the southwest quadrant of Waugh Chapel Road and Strawberry Lake Way

- IV. Patuxent Point Section One (318 single family units less 86 built) and Section Two (165 townhouse units less 77 built) located off Waugh Chapel Road
- V. Piney Orchard Planned Unit Development Phase V Parcel 46 (218 townhouse units less 208 built) located off Waugh Chapel Road west of Patuxent Parkway
- VI. Crawford Property (60 townhouse units and 28 retirement community units) located off Waugh Chapel Road west of Francis Station Road.
- VII. Crawfords Ridge (27 single family units) located off Reigle Court.

The Institute of Transportation Engineers' (ITE) Trip Generation, 7th Edition, was used to estimate the number of trips generated by each of the above developments, which are summarized in Table 3.

Maryland Horse Park Initial TIS January 2006 Maryland Stadium Authority										RK&K Engineers, LLP	
Table 2 Trips Generated by Background Developments											
Development		Weekday						Saturday			
		AM Peak Hour			PM Peak Hour			Peak Hour			
		In	Out	Total	In	Out	Total	In	Out	Total	
Holladay Park 73 SFU		15	46	61	51	30	81	30	31	67	
Carroll's Creek 162 Elderly Housing		6	7	13	11	7	18	-	-	-	
Edenbrook/Fireman's Land 224 Retirement Community Units		26	14	40	31	34	65	-	-	-	
Patuxent Point	Section One 318 SFU Less 86 Built	58 (18)	174 (52)	232 (70)	192 (59)	112 (35)	304 (94)	161 (44)	138 (37)	299 (81)	

Feasibility Study
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	Section Two 165 THU Less 77 Built	13 (7)	64 (35)	77 (42)	61 (33)	30 (16)	91 (49)	49 (35)	41 (30)	90 (65)
	Total	46	151	197	161	91	252	131	112	243
Piney Orchard PUD	Phase V 218 THU Less 208 Built	16 (16)	80 (77)	96 (93)	76 (74)	38 (36)	114 (110)	57 (56)	49 (47)	106 (103)
	Total	0	3	3	2	2	4	1	2	3
Crawford Property	60 THU	6	28	34	27	13	40	32	28	60
	28 Retirement Community Units	3	2	5	4	4	8	-	-	-
	Total	9	30	39	31	17	48	32	28	60
Crawfords Ridge		7	21	28	21	12	33	13	12	25

For all developments, the trip distribution was considered to be 50% from the east and 50% from the west for both entering and exiting traffic. The trips to/from the west of the Maryland Horse Park site generated by the Holladay Park development would impact traffic operations along MD 175, and the trips to/from the west generated by the other six (6) background developments would impact traffic operations along Waugh Chapel Road. The trips to/from the east of the Maryland Horse Park site generated by all seven (7) background developments would impact traffic operations along MD 3. 50% of these trips to/from the east of the site were assumed to go to/from the north along MD 3 and 50% were assumed to travel to/from the south along MD 3. The site locations, trip distribution, and volumes from each background development at each of the study area intersections are shown in Appendix C. The combined background development traffic for weekdays and Saturdays are shown in Figures 7 and 8, respectively.

• **Capacity Analyses**

The total background condition traffic for the weekday AM and PM peak hours was developed by adding the volumes shown in Figures 3 and 7 and is summarized in Figure 9. Similarly, the total background condition traffic for the Saturday peak hour was developed by adding the volumes shown in Figures 4 and 8 and is summarized in Figure 10. The capacity analyses of the total background traffic conditions were performed using the weekday AM and PM peak hour traffic volumes shown in Figure 9 and the Saturday volumes shown in Figure 10. The analyses were performed using the Critical Lane Volume (CLV) method. The results are summarized in Table 4.

Maryland Horse Park Initial TIS January 2006 Maryland Stadium Authority							RK&K Engineers, LLP	
Table 3 Summary of Analyses Results using the Critical Lane Volume Method Total Background Traffic								
Intersection	Weekday				Saturday			
	AM Peak Hour		PM Peak Hour		Peak Hour			
	CLV	LOS	CLV	LOS	CLV	LOS		
MD 3 Southbound @ MD 175	1,865	F	1,876	F	1,262	C		
MD 3 Northbound @ Millersville Road	1,577	E	1,371	D	1,055	B		
MD 3 @ Waugh Chapel Road	2,212	F	2,075	F	1,297	C		
MD 175 @ Gambrills Road	789	A	851	A	644	A		
MD 175 @ Burns Crossing Road	639	A	685	A	495	A		

As shown in Table 4, the MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable level of service (LOS D) during both the AM and PM peak hours on a weekday under total background traffic conditions, just as they do under the existing conditions. Additionally, the MD 3 Northbound @ Millersville Road/MD 175 intersection would operate at an unacceptable LOS during the AM peak hour. The intersections along MD 175 would

continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays. All the study area intersections would continue to operate at an acceptable LOS during the peak period on Saturdays. However, the LOS would decrease from B to C for the MD 3 intersections except for the MD 3 northbound intersection.

The worksheets for all the background capacity analyses (Critical Lane Method) are provided in Appendix D.

IV. Total Build-Out Traffic Conditions

- **Site Generated Traffic**

According to the latest Program Summary for the Maryland Horse Park, the complete build-out of the site will consist of a Visitors Center and Administration Building, an Equestrian/Agriculture Museum, an Indoor Equestrian Show Ring with arena seating, a Restaurant, an Auction Pavilion, an Indoor Warm-Up Arena, a main Outdoor Equestrian Show Ring (including warm-up area) with arena seating, an Equestrian User Storage Building, Horse Barns, a Grand Prix Field, Outdoor Practice Rings, a Steeplechase/Training Track, a Steeplechase Grandstand, Historic Guest Cottages, RV park with Picnic Pavilions, an Equine/Agriculture Education Center, a Petting Barn, Campgrounds and Support/ Maintenance Buildings. All these facilities have been considered as part of this traffic impact evaluation.

- **Weekday Site Trips**

During a typical weekday, the facilities that will be in operation at the site are the Administration Building (9am-5pm), Visitors Center and Museum (9am-6pm), Restaurant (10am-9pm), and Park Maintenance Building (9am-5pm). Each of these facilities will be trip generators during the weekday PM peak hour while the Administration Building and Park Maintenance Building will be the only facilities generating trips during weekday AM peak period.

The trip generation for the site facilities on a typical weekday is based on the following assumptions:

- The Visitors Center will not generate any trips as a stand-alone facility; it will serve as the first stop for all visitors before they proceed to other on-site facilities of interest (including the museum located within the Visitors Center).
- The Museum, which will be housed in the Visitors Center, will attract 150,000 visitors per year¹ and will be in operation for 360 days of the year².
- The occupancy rate for vehicles entering and exiting the Maryland Horse Park is assumed to be 1.9 visitors per vehicle³.
- The number of trips generated during the peak hour for site-generated traffic is assumed to be equivalent to 10%⁴ of the of the total daily trips generated by the site, with 50% entering and 50% exiting during this hour⁵.
- The weekday peak hour for site generated traffic coincides with the weekday PM peak hour of adjacent street traffic; this will evaluate the worst case scenario.
- The vehicle occupancy rate for the Park Maintenance Building is 1.0, with 85% of trips entering (15% exiting) during AM peak hour of adjacent street traffic and 80% entering (20% exiting) during the PM peak hour of adjacent street traffic; this is line with typical arrival and departure patterns for maintenance personnel.
- Additional activities that may occur on weekday evenings are Practice Show Ring events (closed to the public¹) and Auction Pavilion events (infrequent event¹). Therefore, these are not considered as part of the typical weekday activity during PM peak period of adjacent street traffic.

¹ Per the Maryland Horse Industry Board (MHIB) and Maryland Stadium Authority (MSA) estimations, which are based on the Maryland Horse Park (MHP) program elements and comparable park utilization data. The event activity at MHP is expected to be similar in number and distribution to the Kentucky Horse Park

² Based on general operations for similar facilities

³ It is unlikely that visitors attending the Horse Park events will travel individually

⁴ For any roadway system, the weekday peak hour typically constitutes 10% of the total traffic

⁵ Based on general traffic patterns on majority of roadway networks

ITE Trip Generation, 7th Edition, was used to determine the number of trips generated by the Administration Building and the Restaurant. Trip generation for the Museum and Park Maintenance are based on the assumptions listed previously. The trips generated by each activity are shown in Table 6.

The trip distribution for the site is assumed to be 50% to/from the south (along MD 3), 45% to/from the north (along I-97 and MD 32), and 5% to/from the west (along MD 175). The trailblazer signs for the Maryland Horse Park will be provided such that they guide motorists to exit onto MD 3 south from MD 32 or I-97. Hence, 45% of the site traffic is expected to exit onto southbound MD 3 from destinations north and west of the site. The 5% arriving via MD 175 are assumed to originate from MD 32 using the Burns Crossing Road interchange, which will not be signed as a designated exit for the Horse Park. The site generated peak hour volumes on a weekday are shown in Figure 11.

Maryland Horse Park Initial TIS January 2006 Maryland Stadium Authority						
			RK&K Engineers, LLP			
Table 4 Weekday Site Trip Generation						
	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Administration Building 14,170 sq. ft.	23	3	26	4	21	25
Park Maintenance 16 employees	14	2	16	3	13	16
Museum 420 visitors/day	-	-	-	11	11	22
Restaurant 10,411 sq. ft.	-	-	-	52	26	78

• **Saturday Site Trips**

On an event Saturday, the facilities that will be in operation are dependent on the type of events scheduled. Two scenarios have been developed and compared to identify the worst case in terms of Saturday trip generation:

Case 1 Facilities in Operation:

Indoor Show Ring
 Outdoor Show Ring
 Grand Prix Field
 1,024 Horse Stalls
 Education Center
 Museum

Case 2 Facilities in Operation:

Steeplechase Grandstand
 Grand Prix Field
 1,024 Horse Stalls
 Education Center
 Museum

The trip generation for the site facilities on an event Saturday is based on the following assumptions:

- The Visitors Center will not generate any trips as a stand-alone facility; it will serve as the first stop for all visitors before they proceed to other on-site facilities of interest (including the museum located within the Visitors Center).
- The Museum will generate only 20% of its weekday trip volume since 80% of the attendees will already be on-site for other events on Saturday.
- The Indoor Show Ring, Outdoor Show Ring, Grand Prix Field, and Steeplechase Grandstand each will have 85% seat occupancy¹.
- Each horse stall will attract 3.2 people (typical for an eventing horse) who will be attendees or exhibitors for the horses². The stalls will be 85% full¹.
- The Restaurant (including its kitchen and storage facilities) will not generate trips as a stand-alone facility on a Saturday; it will serve visitors already on-site, and potential diners who are not interested in other attractions at the Horse Park will be unlikely to visit the restaurant due to the crowds.
- The Warm-Up Show Rings are support facilities and will not generate trips as stand-alone facilities².

- Events at the Grand Prix Field and Steeplechase Grandstand will not occur simultaneously².
- A typical Steeplechase event will generate 10,000 visitors per day².
- RV Park will be used by the exhibitors and will not generate any additional trips².
- Picnic Pavilions within the RV Park will be available for general use only on non-event Saturdays.
- Campgrounds will not generate trips on an event Saturday; this facility will most likely be used by people attending other events at the park³.
- The occupancy rate for all vehicles entering and exiting the Maryland Horse Park is assumed to be 1.9 visitors per vehicle³.
- The number of trips generated during the peak hour for site-generated traffic is assumed to be equivalent to 10%⁴ of the of the total daily trips generated by the site, with 50% entering and 50% exiting during this hour⁵.

¹ 85% utilization is the accepted practice in traffic engineering for design purposes

² Per the Maryland Horse Industry Board (MHIB) and Maryland Stadium Authority (MSA) estimations, which are based on the Maryland Horse Park (MHP) program elements and comparable park utilization data. The event activity at MHP is expected to be similar in number and distribution to the Kentucky Horse Park

³ It is unlikely that visitors attending the Horse Park events will travel individually

⁴ For any roadway system, the peak hour typically constitutes 10% of the total traffic. Even though the events have specific starting times, not all events will start at the same time. Evaluation is for the most likely traffic scenario as opposed to the absolute worst-case scenario. Multiple major events would not be scheduled to begin during the peak hour of adjacent street traffic in an effort to minimize the impact on the area roadways. It is not reasonable to design for the worst-case scenario, which may occur only rarely

⁵ Based on general traffic patterns on majority of roadway networks

Trip generation for each activity is based on the assumptions above. The number of people generated by each activity is shown in Table 7.

Maryland Horse Park Initial TIS January 2006 Maryland Stadium Authority RK&K Engineers, L		
Table 5 Saturday Site Attendance		
	Case 1	Case 2
	No. of People	No. of People
Indoor Show Ring 3,580 Seats	3,043	-
Outdoor Show Ring 2,025 Seats	1,721	-
Grand Prix Field 2,000 Seats	1,700	1,700
Steeplechase Grandstand 1500 Seats	-	10,000
1,024 Horse Stalls	2,785	2,785
Education Center	150	150
Museum 420 people/day	84 ¹	84 ¹
TOTAL	9,483	14,719

¹20% of weekday

As shown in Table 7, Case 2 is the worst case scenario for an event Saturday generating 14,719 people. Based on the assumptions listed previously, this translates to a total of 775 trips during the peak hour. The trip distribution pattern on an event Saturday is same as for the weekday (see description on page 5 for details). The site generated peak hour volumes on a Saturday are shown in Figure 12.

- **Capacity Analyses**

The total build-out traffic for the weekday AM and PM peak hours was developed by adding the volumes in Figures 9 and 11 and is summarized in Figure 13. Similarly, the total build-out traffic for the Saturday peak hour was developed by adding the volumes in Figures 10 and 12 and is summarized in Figure 14. The capacity analyses of

the total build-out traffic conditions were performed using the weekday AM and PM peak hour traffic volumes shown in Figure 13 and Saturday peak hour volumes shown in Figure 14. The analyses were performed using the Critical Lane Volume method. The results are summarized in Table 8 on the following page.

As shown in Table 8, the MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable level of service (LOS D) during both the AM and PM peak hours on a weekday under total build-out traffic conditions, just as they do under the existing and total background traffic conditions. The MD 3 Northbound @ Millersville Road/MD 175 intersections would continue to operate at an unacceptable LOS during the AM peak hour as it would under the total background traffic conditions. The intersections along MD 175 would continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays. The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would operate at an acceptable LOS during the

Intersection		Weekday				Saturday	
		AM Peak Hour		PM Peak Hour		Peak Hour	
		CLV	LOS	CLV	LOS	CLV	LOS
MD 3 Southbound @ MD 175		1,867	F	1,908	F	1,428	D
MD 3 Northbound @ Millersville Road		1,579	E	1,403	D	1,229	C
MD 3 @ Waugh Chapel Road		2,213	F	2,090	F	1,347	D
MD 175 @ Gambrills Road		792	A	854	A	663	A
MD 175 @ Burns Crossing Road		639	A	688	A	515	A

MD 175 @ MHP Access	503	A	646	A	1,488	E
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peak hour on Saturdays. However, the LOS would decrease from C to D for these two intersections (compared to the total background traffic conditions). The MD 3 Northbound @ Millersville Road/MD 175 and the MD 175 @ Proposed Maryland Horse Park (MHP) Access Road would operate at an unacceptable LOS (LOS E) during the peak hour on Saturdays.

As shown in Table 9, the southbound MD 3 approach causes the MD 3 Southbound/MD 175 intersection to operate at an unacceptable LOS during both the peak hours. In case of the MD 3 Northbound/Millersville Road intersection, the northbound MD 3 approach causes the intersection to operate at an unacceptable LOS. For the MD 3/Waugh Chapel Road intersection, all approaches operate at an unacceptable LOS during both the peak hours. *The worksheets for all the future capacity analyses (Critical Lane Method) are provided in Appendix E. Site photographs are provided in Appendix F.*

V. Conclusions

The significant findings of this initial traffic impact study for the proposed Maryland Horse Park are as follows:

- Under existing conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections operate below Anne Arundel County’s worst-acceptable Level of Service (LOS D) during both the AM and PM peak hours on weekdays
 - The intersections along MD 175 operate at an acceptable LOS during both the AM and PM peak hours on weekdays
 - All of the study intersections operate at an acceptable LOS during the peak hour on Saturdays.



- Under total background traffic conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable LOS during both the AM and PM peak hours on weekdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection would also operate at an unacceptable LOS during the AM peak hour on weekdays
 - The intersections along MD 175 would continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays
 - All of the study intersections would continue to operate at an acceptable LOS during the peak hour on Saturdays. However, the LOS would decrease from B to C for the MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections.
- Under total build-out conditions:
 - The MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road intersections would continue to operate below the worst-acceptable Level of Service (LOS D) during both the AM and PM peak hours on weekdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection would also operate at an unacceptable LOS during the AM peak hour on weekdays
 - The intersections along MD 175 would continue to operate at an acceptable LOS during both the AM and PM peak hours on weekdays
 - The LOS at MD 3 Southbound @ MD 175 and MD 3 @ Waugh Chapel Road would decrease from C to D on event Saturdays
 - The two unsignalized MD 175 intersections would continue to operate at an acceptable LOS during the peak hour on event Saturdays
 - The MD 3 Northbound @ Millersville Road/MD 175 intersection will operate at an acceptable LOS on event Saturdays
 - The MD 175 @ Maryland Horse Park Access Road intersection would operate at an acceptable LOS during the AM and PM peak hours on

weekdays, but would operate at an unacceptable LOS (LOS E) during the peak hour on event Saturdays.

- The MD 3 @ Waugh Chapel Road intersection operates at LOS F on weekdays under existing conditions. The Maryland State Highway Administration (SHA) has been investigating the possibility of constructing an interchange at this location as a long-term improvement. If approved, the interchange would alleviate the existing congestion at this intersection.
- The MD 3 Southbound @ MD 175 intersection is a very congested (LOS E) intersection during the AM and PM peak hours on weekdays under existing conditions. SHA has an active planning project to provide three (3) through lanes along MD 3 southbound at this intersection. This additional capacity would significantly improve the LOS at this intersection.

VI. Synchro/SimTraffic Analyses

Capacity analyses of the total background conditions were performed for the MD 3 southbound at MD 175 and MD 3 northbound at MD 175/Millersville Road intersections using the Saturday peak hour traffic volumes shown in Figure 10. Capacity analyses of the total build-out conditions were performed for these two intersections as well as the MD 175 at Maryland Horse Park Access Road intersection using the peak

hour traffic volumes on an event Saturday shown in Figure 14. The models for these analyses were created using Synchro and the results were obtained by running the model simulation using SimTraffic.

The Synchro 6 and HCS software are based on the capacity analysis theories and methodologies that are provided in the 2000 Highway Capacity Manual. Both signalized and unsignalized intersection capacity is measured in terms of levels of service (LOS) and delay. LOS A (delay \leq 10 sec/veh) represents the best possible operating conditions for both signalized and unsignalized intersections. Whereas LOS F

(delay > 80 sec/veh for signalized intersections and delay > 50 sec/veh for unsignalized intersections) represents congested conditions where the traffic volume has reached or exceeded available capacity, resulting in excessive delays.

A comparison of the delay per vehicle and the queuing experienced along each of the intersection approaches under both the total background conditions (existing lanes) and the total build-out conditions helped identify potential improvements to accommodate the proposed Maryland Horse Park on an event Saturday without causing significant adverse impacts along MD 175 and MD 3. Synchro and SimTraffic were used to determine the necessary improvements because the CLV analysis results were not detailed enough to be used for this purpose. The CLV method cannot account for factors such as signal timing, driver and vehicle characteristics, gap acceptance, turn lane storage lengths, etc.

Queuing analyses was also performed using the SHA accepted 95% probability method. The method is based on Poisson Distribution and assumes that the movement being analyzed is signalized. Hence, the method was applied to analyze queuing within all the turn bays at MD 3 Southbound/MD 175 MD 3 Northbound/MD 175/Millersville Road intersections. The geometric improvements recommended for turn bay extension were based on the SHA method.

Worksheets for the queuing analyses performed using the SHA accepted 95% probability method are provided in Appendix G. The performance, queuing and blocking reports from SimTraffic for total background and total build-out conditions with proposed improvements during an event Saturday peak hour are provided in Appendix H.

VII. Traffic Impact Mitigation

The facilities and events contained within the Maryland Horse Park's Program Summary would create negligible traffic impacts on the intersections within the study area during weekdays. During event Saturdays, the Maryland Horse Park traffic could be accommodated without causing significant adverse impacts to the adjacent roadway

network (MD 175 and MD 3) if the mitigation concepts described below are implemented.

Based on the data and analyses contained within this report and additional Synchro/SimTraffic Simulation analyses, RK&K presents the following potential traffic impact mitigation concepts:

1. Provide widening along westbound MD 175 between the signal at southbound MD 3 and proposed Maryland Horse Park entrance to provide two lanes in the westbound direction, with the left lane becoming a left-turn only lane approaching the park entrance and the right lane continuing beyond the entrance for through traffic on MD 175. (*Note: Any existing shoulders that are removed due to roadway widening will be replaced along the affected roadway segments*).
2. At the intersection of MD 175 and the proposed Maryland Horse Park entrance, provide a deceleration lane (350 ft.) approaching the site access and an acceleration lane (500 ft.) for right turns exiting the site. Provide separate left turn (100 ft.) and right turn lanes along the access road for traffic leaving the site. These additions would improve the level of service at the MD 175 / Site Access intersection from LOS E to LOS B during the peak hour on event Saturdays. *The CLV analysis worksheet showing this improvement is provided in Appendix H.*
3. At the intersection of MD 3 southbound and MD 175, provide a 425-foot right turn bay along eastbound MD 175 to accommodate the increased right turn volume. This improvement is based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method. The queuing analysis sheets are provided in Appendix G. This modification does not improve the level of service at the southbound MD 3 at MD 175 intersection from LOS D since the effect of this geometric improvement cannot be evaluated using the CLV method. The Synchro/SimTraffic analysis confirms that the delay experienced by the

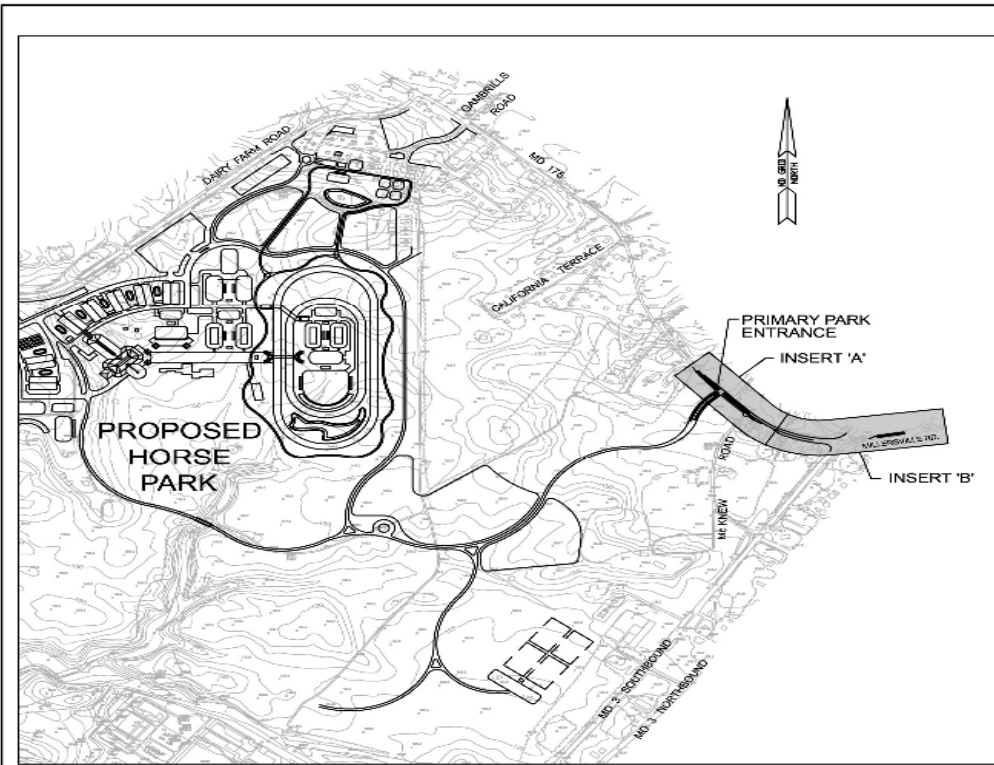
eastbound right turns in the total build-out condition remains the same as in the total background condition even if a 425 ft. right turn bay is provided. The delay will be significantly higher if the right turn bay is not provided. *The SimTraffic Performance as well as Queuing and Blocking Reports for Total Build-Out Saturday with proposed improvements are provided in Appendix H.*

4. Extend the southbound right turn lane at MD 3 southbound and MD 175 intersection by 180 feet to provide a 425 feet long turn bay. This improvement is based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method.
5. Modify the lane use within the crossover between the MD 3 southbound and northbound lanes to provide double left turn lanes in the eastbound direction with 250 feet of storage. Currently, there are two westbound through lanes and one eastbound through lane in the crossover that extend for the entire distance between northbound and southbound MD 3, with separate single left turn lanes onto northbound and southbound MD 3. This option would convert 250 feet of the left westbound lane to a second eastbound left turn lane, leaving only one remaining westbound receiving lane in the crossover. Since the westbound approach from Millersville Road has only one lane, and the left-turn lane from northbound MD 3 is a single lane, the resulting single westbound receiving lane within the crossover approach is acceptable. For 250 feet approaching the southbound MD 3 lanes, the second westbound through lane would open up to allow two lanes of traffic to cross MD 3. The Proposed Lane Configuration is shown in Figure 15. These additions would improve the level of service at the MD 3 northbound/MD 175/Millersville Road intersection from LOS C to LOS B during the peak hour on event Saturdays. *The CLV analysis worksheet showing these improvements is provided in Appendix I.*
6. Extend the northbound left turn lane at MD 3 northbound and Millersville Road intersection by 290 feet to provide a 500 feet long turn bay. This improvement is

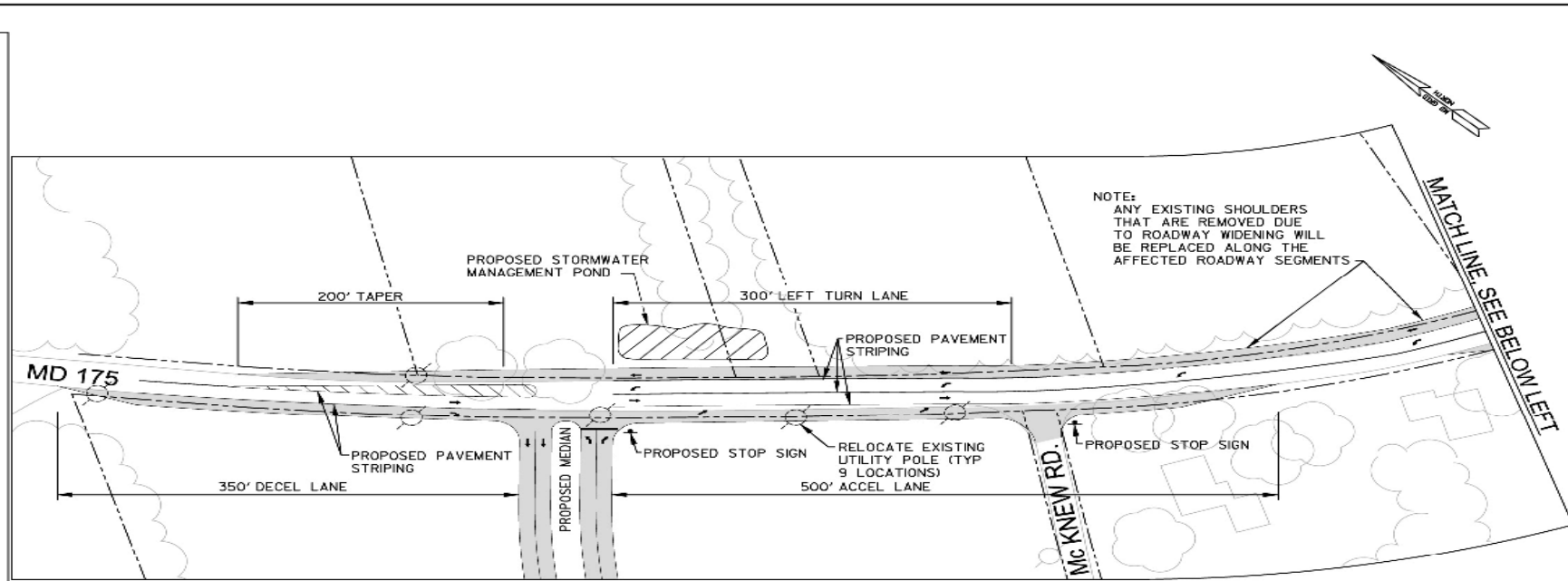
based on queuing analysis conducted in accordance to the SHA-accepted 95% probability method.

7. In case of special events with unusually high attendance, alternate traffic mitigation measures such as point control officers for directing motorists and manually adjusting the signal timing at the MD 3 at MD 175 intersections may be needed.
8. Provide guide signing along eastbound MD 32 located immediately prior to the MD 3/I-97 interchange, directing Horse Park traffic to use southbound MD 3.

The proposed improvements would be needed only along a short segment of MD 175 because signing and official Horse Park media (brochures, advertisements, etc.) would instruct all visitors to use MD 3 to access the park, resulting in minimal Horse Park related traffic along MD 175 west of the park entrance. This would significantly minimize the traffic impacts on the surrounding neighborhoods and would concentrate the impact at one location. Without any widening in this one location, the guide signing and official Horse Park publications would need to direct some visitors to use additional roads such as Waugh Chapel Road, Dairy Farm Road and Burns Crossing Road to reach the park entrance on MD 175, which would spread the impact of Horse Park traffic across a larger area to the west and would have a more detrimental impact on the surrounding communities.



MARYLAND HORSE PARK - CONCEPTUAL TRAFFIC PLAN
SCALE: 1" = 800'-0"

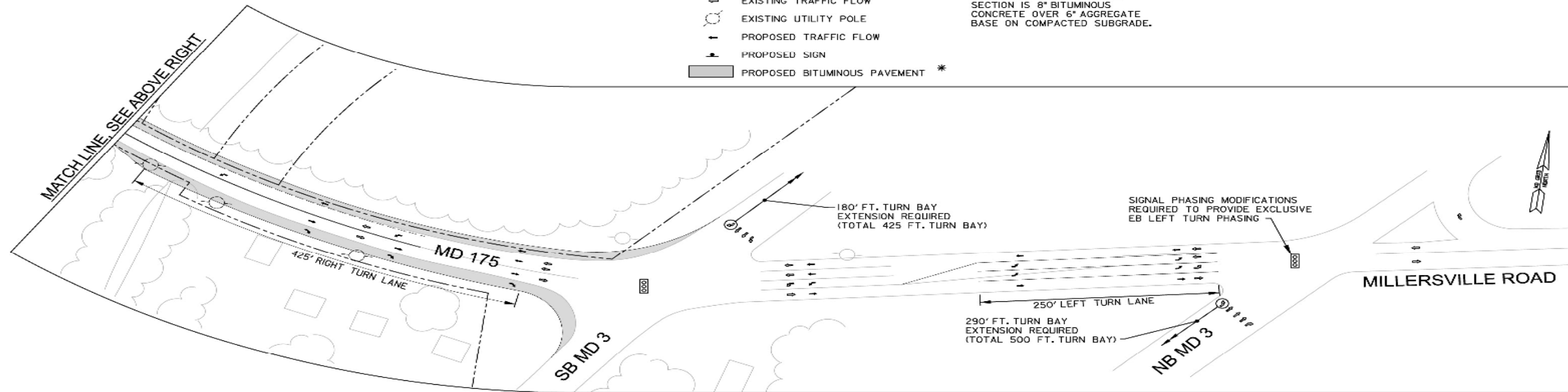


INSERT A
MD 175 SITE ENTRANCE IMPROVEMENTS
SCALE: 1" = 60'

- LEGEND**
- EXISTING PROPERTY LINE
 - ⊞ EXISTING TRAFFIC SIGNAL
 - EXISTING TRAFFIC FLOW
 - EXISTING UTILITY POLE
 - PROPOSED TRAFFIC FLOW
 - ▲ PROPOSED SIGN
 - PROPOSED BITUMINOUS PAVEMENT *

* NOTE: PROPOSED PAVEMENT SECTION IS 8" BITUMINOUS CONCRETE OVER 6" AGGREGATE BASE ON COMPACTED SUBGRADE.

GENERAL NOTE:
EXISTING PROPERTY BOUNDARY INFORMATION IS NOT BASED UPON FIELD SURVEY. THIS INFORMATION WAS OBTAINED FROM EXISTING TAX MAPS.



INSERT B
MD 3 / MD175 INTERSECTION IMPROVEMENTS
SCALE: 1" = 60'

OWNER
MARYLAND STADIUM AUTHORITY
333 WEST GARDEN ST.
SUITE 500
BALTIMORE, MD 21202
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F 410.323.1000

ARCHITECT
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MARYLAND HORSE PARK
GAMBRILLS, MARYLAND
PROPOSED CONCEPTUAL
TRAFFIC PLAN

DATE : JAN. 27, 2006
DRAWING NO.
CS-2

01/27/2006
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